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SPECIAL ARTICLE

THE FUNCTION OF THE SPLEEN

By H. A. HALL, M. D., AND E. ABLAHADIAN, B. Sc.,
Glendale, California

AT LEAST UNTIL WE KNOW MUCH MORE THAN WE NOW DO OF THE SUBJECT, AN OCCASIONAL REVIEW OF OUR KNOWLEDGE OF THE FUNCTIONS OF THE SPLEEN IS WORTH WHILE. WHEN TO SUCH A REVIEW IS ADDED SOME APPARENTLY IMPORTANT AND CAREFULLY CONDUCTED RESEARCH, THE SUBJECT IS ENTITLED TO PROMINENCE.

IN OFFERING THIS ARTICLE FOR PUBLICATION, DOCTOR HALL STATES IN HIS LETTER OF TRANSMITTAL:

"UNDER SEPARATE COVER, I AM FORWARDING AN ACCOUNT OF SOME ORIGINAL WORK PERFORMED BY MYSELF AND A COLUMBIA GRADUATE CHEMIST. I BELIEVE THAT THE RESULTS OF OUR WORK ARE BOTH INTERESTING AND PRACTICAL, AND THROW, AT LEAST, A FEW RAYS OF LIGHT UPON THE TRUE FUNCTION OF THE SPLEEN.

"MISS ALBAHADIAN, WHO WORKED WITH ME CONTINUALLY THROUGHOUT THE EXPERIMENTS, GRADUATED FROM CHEMISTRY AT COLUMBIA, IN 1917, HAD TWO YEARS OF POST-GRADUATE WORK IN CHEMISTRY AT CORNELL UNIVERSITY, AND HAS PERFORMED HIGHLY SATISFACTORY WORK IN SEVERAL PRIVATE LABORATORIES IN CALIFORNIA.

"I GRADUATED FORM ALFRED UNIVERSITY, A BRANCH OF THE UNIVERSITY OF THE STATE OF NEW YORK, IN 1915, WITH A BACHELOR OF SCIENCE DEGREE, AND LATER TOOK UP MEDICINE, GRADUATING FROM THE COLLEGE OF MEDICAL EVANGELISTS IN 1920. SINCE GRADUATION, I HAVE BEEN IN ACTIVE GENERAL PRACTICE AT RIVERSIDE, WITH THE EXCEPTION OF THE PAST TEN MONTHS, DURING WHICH TIME I HAVE BEEN IN GLENDALE, CALIFORNIA. I AM A MEMBER OF THE COUNTY, STATE, AND NATIONAL MEDICAL SOCIETIES.

"IF YOU CARE TO READ THIS ARTICLE, WE SHALL BE PLEASED, AND IF YOU DECIDE TO PUBLISH IT IN PART, OR IN WHOLE, IN CALIFORNIA AND WESTERN MEDICINE, WE SHALL, OF COURSE, BE GREATLY PLEASED.

"WE SEND THE ACCOUNT OF OUR WORK TO YOU WITH THE IDEA OF SPREADING THE PRACTICAL INFORMATION WHICH WE FELL UPON BY ACCIDENT AND DEVELOPED BY MUCH HARD WORK."—EDITOR.

THERE is just one finding in common in all the list of conditions that are known to have splenic hypertrophy, or splenomegaly, so-called.

The spleen may have something to do with hemolysis; it may have something to do with the elaboration of uric acid; it possibly is an important lymphatic gland, but, above all these functions, we wish to place its action as a calcium metabolism stimulant, preparing suitable calcium salts for presentation to the blood stream and the impoverished body cells.

THE authors of this article had for some time felt that the spleen must have some worthwhile function, and set to work about a year ago to carry out some very definitely planned campaigns into the splenic area to see if the spleen were worth anything, and, if so, for what.

A great deal has been written about the spleen, pro and con. Many functions have been attributed to it and it has been endowed with all sorts of possibilities, as, for instance, a graveyard for the red blood-cells; also as one link in the lymph glandular chain. The upshot of the whole matter has been that, for a long time, the only definite thing known about the spleen was its average size, weight, and anatomical position in the body. For us to state, for instance, that its average length is 12 centimeters; breadth, 7 centimeters; thickness, 4 centimeters; and that its weight is approximately 160 grams, would be repeating facts that can be readily found in all of our standard anatomy books.

Let us, for a moment, look over the possibilities that the spleen has had in the field of medicine from the supposititious standpoint entirely. This organ was supposed to have something to do with the elaboration of iron, probably set free after the demolition of the red corpuscles. This gland was also implicated for a time in the production of uric acid. A digestive function was also attributed to the spleen and its hormones, for it was observed, in some instances, that the gland enlarged after meals, reaching its maximum at approximately the fifth hour after eating. Enlargements of the spleen have been observed in practically all of the fevers, especially those of the intermittent type.

Mr. Raymond Householder of Chicago, in 1921, experimented with guinea pigs, and in a long series

of cases found that the subcutaneous injection of hydrochloric acid caused splenomegaly. This author and experimenter, in his conclusions, infers that this enlargement could possibly be due to the increased destruction of red cells which must accompany this artificial acidosis, and yet wavers also toward the belief that the gland was perhaps hyperfunctioning as a hematogenic gland to offset this same anemia.

Other experimenters (Ott and Scott of The Medical Chirurgical College of Philadelphia) have tested certain of the animal extracts, as well as other drugs, and their influence upon splenic size. Infundibulin (pituitrin) was shown to decrease primarily the volume of the spleen and then to cause an exaggeration in its size. No relation between blood-pressure changes and splenic size was demonstrated. Pineal solution was tested and found to cause a diminution in the size of the spleen, after which the gland returned to normal. Thymic infusion had the same action, as did also infusion of the ovaries. Corpus luteum in solution produced an increased volume in the gland, which shortly became normal. Infusions of mammary tissue and dried pancreas had no action upon splenic volume. The results from injections of quinin hydrochloride were not of a nature to establish any definite reports, for, in some instances, the spleen increased, and in others decreased in size. Probably all of the above changes can be explained from blood vascular changes of the vasomotor type, as, for instance, when adrenalin or infundibulin were used.

Can we say, then, that the spleen has an internal secretion or hormone? Does it break up red cells because of a true hormone or because of a secretion of the digestive type that breaks down red blood corpuscles or disease germs, as the case may be? Can we not explain some of its functions by stating that it produces phagocytes which devour invading organisms and by a rapid elaboration on the part of the splenic laboratory may fill the blood stream with a normal amount of white cells in ordinary existence and an overamount in certain of the lymphatic leukemias, for in such cases we find a splenomegaly? Whether this action of the spleen in relation to blood cells is endocrine or not we may never be able to state, but we do know that the results of splenectomy are very satisfactory in certain splenic anemias and in hemolytic jaundice.

Inlow, at the Mayo Clinic, some years ago carried out a series of experiments to show the effects of splenectomy upon digestion, with particular reference to the flow of bile and the production of bile acid. He concluded that there is an increase in the outflow of bile after splenectomy, constituting an amount about one-fourth above that produced in the normal animal. The findings vary, however, when the time element is considered. Shortly after splenectomy, there is an increase in the output of bile, and along with this there is a concomitant rise in the hemoglobin content of the blood, and also in the red blood-cell count. All of this is later followed by an anemia and a reduction in the amount of hemoglobin, with more or less change in the flow of bile, usually more readily observed in late cases. His most dependable finding was that the regular fluctuation in the flow of bile and in the blood condition is accentuated by splenectomy.

Whether these findings are practical or not, we are unable to state. They are of academic interest at least. Other investigators at the Mayo Clinic have shown that the spleen may at times serve as a reservoir for the retention of syphilitic spirochetes, and, just for the moment, it is pleasing to know that the removal of such spleens is attended by a rapid change for the better on the part of the patient. Things may turn for the worse later, but, in many instances, there is an apparently satisfactory result following splenectomy in these individuals. This same clinic removed a large series of spleens in pernicious anemia, but the results were so discouraging that the procedure has been discontinued for the relief of this particular disease.

Dr. Reginald Weiler, of New York City, has given us an exhaustive discussion of the so-called spleno-pancreatic apparatus, and his conclusions would evidently show that it has a definite relation to the endocrine apparatus in general. The relation of the circulation to both glands is such that he believes that trypsin should be called the spleno-pancreatic secretion (a true internal secretion), "which reaches the portal vein by the way of the splenic vein and which continues in the blood stream the splitting process begun in the intestinal canal." That the spleen may have, therefore, something to do with the elaboration of insulin would be indicated by the fact that the islands of Langerhans are three times as numerous at the splenic extremity of the pancreas as in other parts, and, further, at the terminal portion of the descending arm, where there is no communication with the splenic vein, there are no islets. The author is sure that the splenic vein serves as "a channel for the transmission of pancreatic and splenic ferments of the liver. Trypsin becomes a constituent of the entire blood stream where albuminoids are broken down into simpler bodies."

There are many causes for the enlargement of the spleen. Osler has given us an exhaustive list of the causes of splenomegaly. This is perhaps worthy of repetition at this time. It serves to show the great number of conditions varying from some of the metabolic disturbances in childhood to violent infections which have to do with splenic disturbance. It is as follows:

I. In children: (a) Disturbances of metabolism, rickets, amyloid disease; (b) Chronic intestinal affections; (c) Large but ill-defined groups of intestinal disorders, particularly in the tropics; (d) The pseudo-leukemia infantum (Von Jaksch's disease).

II. In the infections: (a) Syphilis; (b) Malaria; (c) Kala-azar and other forms of tropical splenomegaly; (d) Hodgkin's disease; (e) Tuberculosis.

III. In primary disorders of the blood-forming organs: (a) Leukemia; (b) Pernicious anemia; (c) Chlorosis; (d) Hemachromatosis; (e) Polycythemic splenomegaly.

IV. In cirrhosis of the liver: (a) Syphilitic; (b) Alcoholic; (c) Hypertrophic of Hanot.

V. Hereditary and family forms of splenomegaly: (a) Congenital acholuric icterus; (b) Constitutional disturbances, dwarfing, etc.

VI. New growths and parasites: (a) Sarcoma; (b) Primitive endothelioma of Gaucher; (c) Echinococcus; (d) Schistosoma of Japan.

VII. Splenomegaly not correlated with any of the above or with any known cause: (a) Banti's disease in its three stages: 1. Simple enlargement; 2. Splenomegaly with ane-

mia; 3. Splenomegaly with anemia, jaundice, and ascites.

European writers have given us quite a large number of reports of the findings in animals either splenectomized or treated with splenic solution. Some of these writers, as, for instance, Bayle of Cannes, is certain that the splenic function has to do with the development of antibodies and immunity. This investigator treated a large number of tuberculous cases with a splenic preparation, and, in his first paper, read at Rome before The Congress of Tuberculosis, in 1912, he says: "I feel authorized by my results to call splenic opotherapy a specific treatment for tuberculosis. . . . From the therapeutic standpoint, it modifies the soil, rendering it less suitable for the growth of the bacillus of Koch." This statement is very sweeping, and it is not our purpose to comment on it here. We are giving this report purely to show the belief this physician has in the function of the spleen. Quoting further from this author, we find: "Employed in convalescence, it prevents tuberculosis by increasing the mineral content of the tissue." He even makes more definite statements than this, and his belief that splenic solution or extract has a certain control of tuberculosis is one the writers could accept only after greater personal experience with this form of therapy. More of this later, however.

Hans Sollberger tells us that, after splenectomy in normal rabbits, there is an increase in the hemoglobin figures and also in the number of the red blood corpuscles, perhaps due to the reduction of hemolysis which must take place if we are to accept the original theory of the "graveyard" possibilities in the splenic reservoir. Sollberger believes that, after splenectomy, the bone marrow is more sensitive and has a greater working capacity, perhaps due to the removal of one party in a balanced action, the idea being that there is a mild antagonism, or ratio, at least, between the blood-destroying spleen and the blood-forming bone marrow. To prove this latter-mentioned theory, he injected hydrogen cyanide subcutaneously in normal and splenectomized animals. We know that the action of this powerful poison is hemolytic to a marked extent. Just why he chose this particular drug, we do not know, but, at any rate, it gave immediate depression in the amount of red blood corpuscles and hemoglobin in all animals treated. The normal animals were very slow in securing their former hemoglobin and red blood corpuscle figures, whereas the splenectomized animals, with readily active bone marrow, produced blood corpuscles rapidly and arrived at normal figures as to blood content much more readily than their normal fellows. Sollberger is confident that the ready increase in hemoglobin and red blood corpuscles is due to the rise in the efficiency of the marrow of the splenectomized animal. This same investigator removed the thyroids in rabbits to find, if possible, a compensatory change on the part of the spleen. He does not report any change in size or texture of the latter gland, but says that there is probably a non-specific stimulation of blood-forming organs, for he noted an increase in the formation of hemoglobin after thyroidectomy. These are interesting findings, but again of a purely academic type. We must remember, however, that the position of small straws can readily indicate the direction in which the wind is blowing. To many, this idea of a balance between the spleen and bone marrow is new, and, while theoretical, is still sensible and worthy of consideration in certain diseased conditions. The ready relief in Banti's disease, in any stage, following splenectomy is a vindication of this idea.

Schröder, Kaufman, and Kögel have tested spleen pulp as a direct media for implantation of tuberculous cultures, and report that virulent tuberculous bacilli are weakened at the normal breeding temperature in such a media, and many of them are destroyed. Complete destruction or solution of the tuberculous bacilli was not noticed. The anti-tuberculous value of the spleen must be rather worth considering, for we know, not only from the findings of these investigators, but from the generally accepted principles in our own United States that the body of an animal is considered to be saturated with tuberculosis only when the spleen itself is thoroughly involved. In other words, when we have marked splenic tuberculosis, we have an organism whose resistance has been completely overcome in regard to Koch's bacillus, and that is why inspectors in our slaughterhouses throughout the country investigate the spleen in all cases first. The anti-tuberculous action of the spleen and its secretion is one that has aroused the attention of a large number of investigators other than those just mentioned—a function that we believe is worthy of further investigation, particularly after some experiences we have had in the last year or so. The proof of the value of splenic therapy is to be found, we believe, in clinical and animal experimentation rather than in vitro. In animals treated with splenic extract, there is a change that is readily observed and apparently consistent throughout the numerous resultful experiments.

Walter Frey and Erich Hagemann have brought forth a clinical test, which we believe is fairly delicate, to determine the functional capacity of the spleen. The test consists in injecting from 0.6-1 mg. of adrenalin subcutaneously and then counting the number of lymphocytes twenty minutes after the injection of the adrenalin. In cases who have a diseased or hypofunctioning spleen, the lymphocyte increase will be less than 1500 cells within the twenty-minute time limit. The results of this test cannot be considered absolute, but should be taken along with the general findings in the case. These two writers reported a series of sixteen patients tested with the adrenalin-lymphocytosis procedure and found only one doubtful result. In all the remaining fifteen cases, the reaction was accurately diagnostic of the true splenic condition: i. e., the positive reactions were present in those patients who had a normal spleen and the negative reactions in all instances were attended by a diseased spleen. We do not believe that this test is being used to any great extent in the United States, and we deem it worth while to consider it in cases in which we would like to know whether or not the spleen is diseased for obvious reasons.

From the Italian sector we have some recent reports from T. Silvestri, in which he reviews, as a result of his own experiments, some of the actions of the spleen, and also tells us of some of the origi-

nal digestive experiments which he is confident show a relation between splenic function and pancreatic secretion. In this review he tells us that the function of the spleen is partly to furnish the peptic glands with material of great importance to their normal functioning, although this particular substance is not indispensable, for pepsin is readily formed after a period of readjustment in splenectomized animals. He believes, however, that gastric digestion is never as active after splenectomy as before. In other words, there is a constant hypopepsia, but the other principles of the gastric juice remain unchanged. He tells us that the gastric ferments can be corrected quite readily by splenic organotherapy. The translator does not tell us, in the article which we have at hand, whether or not the splenic extract was given by hypodermic or by mouth. We should like to know more about the method of administration. The general principles involved, however, are interesting and worth recording here.

We are told further in this report from Silvestri that the three enzymes found in the internal secretion of the pancreas are unaltered by splenectomy. He states, however, that albuminoids are not digested by the pancreas after splenectomy, but the powers of the gastric juice, so far as the splitting of albuminoids are concerned, is markedly increased under the same conditions; and, further, we are told that this increase may become very great, perhaps making up for the simultaneous loss of that function on the part of the pancreas. This would lead us to believe that there is some relation between the pancreas and the spleen. As we have already stated, there is a circulatory arrangement between the two glands which definitely controls the location of the Langerhansian isles, for the portion of the pancreas, which extends beyond the spleen and is not connected with it in a circulatory way, has none of these specialized islets.

After looking over the previous discussion, many of us will be willing to agree with William Osler, who said that he enjoyed reading an article concerning the splenic function which contradicted a previous article on the same subject, for he had never been able to assure himself that the spleen had a definite business in life. Yet, we must not say that the work that has been done in this field was inaccurate or done in a slipshod manner. The rather elusive function of the spleen has aroused the interest of many men whose time could well be spent in research work, and they have contributed here and there some ideas that, while at first appearance may be antagonistic in the final expression of fact, yet we believe are capable of being correlated under proper headings; at least, we wish to make an attempt to do so, in view of the very definite findings that we have had in our experiments with splenic solution, and in which we considered an entirely new phase of action.

We believe that this attempt is worth while, for we find, as an expression of the common belief in splenic unimportance, the following paragraph taken from an editorial appearing in The Journal of The American Medical Association, January 7, 1922:

"Taken all together, an enormous amount of experimental work, as well as not a little careful clinical study, has failed to show conclusively that the spleen is an organ of internal secretion, or to account in any way for the fact that it is a large organ, universally distributed in the animal kingdom, provided with a blood supply so large as to suggest that it must have great activity and most important functions. Whatever it does in the way of destroying decrepit red cells can be done elsewhere. Surely it must have some further task than this; yet, if it has, this must be readily carried on in other tissues, since splenectomy is so well endured; probably this is why we cannot find out just what the chief function of the spleen may be."

The material thus far placed in paragraph form for the reader's interest has been by way of preparation, so to speak, for our original work. We had originally begun our work with splenic extracts to test their action in cases of tuberculosis. This was due to the belief we had in their possibilities in this type of infection, not so much from personal experience as from observing the writings of others, and also from some discussions we had had with physicians who were beginning to become enthusiastic about this particular endocrine, if endocrine it is. Purely by accident, Miss Ablahadian discovered that the rabbits who had received intravenous splenic extracts were showing some phenomenal increases in blood calcium. The blood calcium tests were being performed at the time to produce, if possible, a briefer clinical method for determining blood calcium—a matter that had been brought to the attention of the medical profession by the work of Drs. Vines and Grove, of Cambridge University, England, who had been working with parathyroid extracts. So sharp was the increase of blood calcium in the animals receiving splenic extract, that a series of them were immediately placed upon this solution, the blood being tested at regular intervals for its calcium content. We were soon very much surprised to find that all of the rabbits placed on splenic treatment were found to have an increase in blood calcium; in fact, this increase was found to be several times greater than in rabbits who received parathyroid nucleoprotein by vein. We shall proceed, then, to give you some of the information that we have gathered during the last nine months after exhaustive experimentation and accurate laboratory work.

It is evident that an injection of spleen nucleoprotein causes the outpouring of a shower of ionic calcium in the blood stream. This increase in blood calcium is fairly rapid and reaches its greatest height in about twenty-four hours after the injection. In from twelve to fourteen hours more, the findings are, in terms of calcium, again practically normal, never becoming subnormal. It is evident from our findings that any excess of lime in the blood is shortly eliminated by the kidneys, and that is our main idea in adding a small amount of parathyroid substance to the splenic solution, since the parathyroid preparation evidently acts as a mordant to hold the excess calcium in the blood and to prevent its rapid elimination. We can readily see that the actions of splenic substance and that of parathyroid substance are, while similar in many ways, very different when it comes to the elimination of calcium. By combining the two preparations, we have a re-

markable stimulant to the chemistry of blood calcium and a hormone whose activity already has been demonstrated as being a conserver of blood calcium.

The following tables will show that the calcium is markedly increased after the injection of spleen solutions intravenously. In several instances as great a change as three milligrams was observed after the injection of splenic hormones, and in almost no instance have we observed a decrease in blood calcium. It seems that the reaction is very dependable:

Rabbit No.	Normal Calcium	Calcium after 2 injections	Calcium after 5 injections
4	14.40	15.42†	
4	14.78		15.00†
5	14.41		14.93†
6	15.9	15.80†	
6	14.43		18.20†
7	16.9	16.20†	
9	15.3	16.0*	15.6*
10	16.5	20.0*	17.4*
11	15.0	18.5*	15.2*
12	16.0	17.0*	22.1*
13	15.0	16.0*	19.6*
14	16.0	15.5*	21.0*

* Figure produced by spleen injections, 1 cc. daily.
† Figure produced by injections of a combination of splenic and parathyroid extracts, 1 cc. daily.

Blood-cell increases have been observed after the injection of spleen nucleoprotein. Contrary to the old belief that the spleen has a hemolytic action, it was found that the red blood-cells increased in some instances over one-half million in a few days' time and, further, that the blood hemoglobin was increased, as would be expected when the red blood-cells were augmented in numbers.

The clotting time was shortened markedly in every case. This was noticed very readily when drawing blood from experimental animals. In some instances, the blood clotted so readily that it was withdrawn from the marginal ear vein with considerable difficulty, the wound having to be freshened frequently.

Two rabbits were splenectomized and their blood tested at intervals for its calcium content. In both rabbits thus treated, the blood calcium dropped almost 50 per cent. A control animal was cut open and sewed up without tampering with the spleen or any of the other abdominal viscera. In this rabbit no change was noted in the blood calcium. The two splenectomized rabbits were given intravenous injections of spleen solution, after which the blood calcium came to normal.

In keeping with the foregoing considerations, a series of tuberculous patients was placed on splenic extract therapy (by hypodermic administration) with some satisfactory changes in the blood calcium findings. These patients thus far have been observed for a period of a little over one month. The clinical findings have not been changed markedly. The physical findings will probably respond more slowly to treatment in tuberculosis than in any other condition on account of the marked chronicity of the infection and the usual long periods of toxemia preceding the tests.

Further experiments must be carried out in tuberculosis to find, if possible, a strength of solution that can be used which will be comparable to the severity of the symptoms of the disease. Ordinary strengths of splenic extract are probably not sufficiently active for Koch's infection. Ordinarily, a 4 or 5 per cent solution has been used. If we can double that in this condition, well and good. That particular problem remains to be solved.

We believe one of the possibilities of treatment with this solution lies in inhibiting a tendency to hemorrhage in pulmonary tuberculosis, as injections of solutions of spleen shorten the clotting time in a few hours after the injection.

It is evident that spleen solutions, when injected into the human economy, cause an outflowing of calcium which is constant, marked, and readily produced. Further, it is evident that this rapid increase of calcium will be followed shortly by a loss of that particular substance due to elimination and lack of a supply. Since parathyroid is capable of fixing the blood calcium and of preventing its undue elimination, a combination of parathyroid (the calcium conserver) and spleen will be an ideal one for use in all calciprivic states, including tuberculosis.

May we call your attention to the fact, then, that there is just one finding in common in all the list of conditions that are known to have splenic hypertrophy, or splenomegaly, so-called? If we look down through the list of diseases given by Osler, we can, at least, say that there is one thing in common in all of those disturbances, and that is calciprivia, demineralization, or acidosis, depending upon the reader's personal choice of a term indicating lack of alkali reserve, and, therefore, a need for calcium ions. The spleen may have something to do with hemolysis; it may have something to do with the elaboration of uric acid; it possibly is an important lymphatic gland, but, above all these functions, we wish to place its action as a calcium metabolism stimulant, preparing suitable calcium salts for presentation to the blood stream and the impoverished body cells.

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Conference Board of Physicians in Industry—At a recent meeting of this interesting organization, it was agreed that many trifling injuries created no disability and required no redressing, but that many serious infections, entailing much loss of time and production, arose from the neglect of such patients. . . . Over 2000 infection cases were reported among 32,500 workers during 1924, and of this number only about twenty had received treatment prior to the appearance of the infection. It was thus seen that where prompt medical attention is given to injuries, infections are practically eliminated, and that practically all infections in such injuries result from delay in reporting for treatment. In the experience of the members of the conference the most beneficial results to the worker who is recovering from an injury are obtained in cases WHERE HE IS RETURNED TO EMPLOYMENT PENDING COMPLETE RECOVERY. Certain types of workers are unfavorably influenced by prolonged periods of idleness pending complete recovery, and it is hard to get such persons to again take up their usual employment. It was the unanimous conclusion of the board that the practice of permitting the worker to unduly prolong his idleness was a factor in delayed recovery and the development of traumatic neurosis and certain cases of malingering. In many patients a certain amount of physio-therapeutic treatment is necessary before any work can be attempted, but the board believes that supervised active motion of the previously injured part, carried out as work in the factory, also leads to more prompt recovery.

KIDNEY ANOMALIES: REPORT OF A CASE OF BILATERAL FUSION OF A SUPERNUMERARY KIDNEY

By WILLIAM E. STEVENS, M. D., San Francisco

Examination of available literature fails to reveal a previously published case.

Bilateral fusion and horseshoe kidneys not the same in etiology or pathology.

If one chooses to classify the reported case as horseshoe kidney, it is still unique.

DISCUSSION *by Louis Clive Jacobs, San Francisco; Burnett W. Wright, Los Angeles; A. S. Musante, San Francisco; E. Spence De Puy, Oakland.*

Doctor Stevens supplies, with his interesting article, a complete bibliography of previous publications on the anomalies of kidneys. Under the policies of CALIFORNIA AND WESTERN MEDICINE, and most other general medical journals, bibliographies are not published. Workers interested in studying the subject more fully will gladly be supplied with a copy of the bibliography by the secretary of the California Medical Association or by Doctor Stevens.

I wish to utilize this opportunity to again call the attention of readers to the great assistance of the Cumulative Index of all worth-while medical literature published quarterly by the American Medical Association and furnished at a nominal subscription price.—EDITOR.

S anomalies of the kidney are more frequently encountered than those of any other organ, these conditions are of special interest to the urologist, and the possibility of their occurrence should always be considered in the presence of obscure lesions of the abdomen or upper urinary tract.

In 4215 consecutive autopsies, Lowsley, Kingery, and Clarke found 1.47 per cent of renal anomalies. In the records of 11,168 autopsies, Morris found abnormalities of the kidney in 211 subjects, a little less than 2 per cent. This author collected from the literature between 1883 and 1893, 21 cases of various malformations. Of these, 8 were horseshoe kidneys, 11 single, and 2 unilateral fused kidneys. Dorland, in 1911, collected 121 cases of renal anomalies which had been reported in the literature during the preceding twelve years. He added two of his own. Of these, 36 or 29.2 per cent were horseshoe kidneys, 24 or 19.5 per cent were single kidneys, 14 or 11.2 per cent unilateral fused kidneys, and only 5 or 4 per cent supernumerary kidneys. Eight of the third group were classified by Dorland as sigmoid kidneys, and six as disc-shaped kidneys. The former are now usually included with unilateral fused kidneys. Of these 123 cases, the sex was stated in 66; 53.2 per cent of the 123 occurred in males, and only 28 per cent in females. The left kidney was affected in a little over 70 per cent. In 1905, Gerard, quoted by Dorland, studied 527 cases of renal anomalies. He arrived at practically the same conclusions.

Considered from a standpoint of variation in number and form, these anomalies are, therefore, in the order of their frequency, horseshoe kidney, single or solitary kidney, unilateral fused kidney, and supernumerary kidney. Atrophic, displaced or ectopic kidneys and reduplication of the pelves and

ureters, which are comparatively common, will not be discussed.

The feature of greatest interest, as well as the one of most clinical importance, is that of preoperative diagnosis. An attempt will be made in this paper to correlate in as concise a manner as possible the symptoms of the above four types of renal abnormalities and to differentiate them from pathologic conditions of the upper urinary tract and abdominal organs.

As all types of renal malformations are frequently associated with abnormalities of other organs of the body, especially those of the genital tract, the presence of developmental irregularities of the latter organs should suggest the possibility of kidney anomalies. Abnormal organs are also more susceptible to disease and, as a rule, unless accidentally discovered, the symptoms of these complications first attract attention to the urinary tract. The most common pathological processes found with these conditions are hydronephrosis and calculi, although tuberculosis, pyonephrosis, and pyelonephritis are not infrequently seen.

HORSESHOE KIDNEY

Morris found 19 horseshoe kidneys in 18,244 recorded autopsies, Premdlsberger, 6 in 1344 autopsies; Socin, 5 in 1630; Stewart and Lodge, 14 in 6500; Botez, 72 in 51,504; Carlier and Gerard, 80 in 68,000; Oleson 1 in 507; and Lowsley, Kingery, and Clarke, 1 in 600 consecutive autopsies. Summarizing, this anomaly was found once in 740 postmortem examinations.

Braasch stated that, in 1000 kidney operations performed at the Mayo Clinic from 1910 to 1920, 17 were on horseshoe kidneys. They occurred more frequently in women. Botez stated that, in 1000 kidney operations, the proportion of horseshoe kidneys was 1-143, about two and one-half times as many as at the Mayo Clinic.

When subjective symptoms are present, the most common is more or less pain in the umbilical region. This is usually increased by exercise and relieved by rest in bed. Pain is also present in the lumbar region at times. Instead of definite pain, these patients sometimes complain of an uncomfortable feeling or sensation of pressure in the upper abdomen. Manipulation of the kidney frequently causes a peculiar, disagreeable, sickly, faint sensation along the thigh or in the hypogastric region. There may be periods of frequent or painful micturition brought on by muscular effort, by manipulation of the tumor or by pressure upon it by hardened or retained feces. Rovsing described three cases in which pain was evidently caused by pressure on the nerve trunks. Hickling described a case in which acute congestion of the fused kidneys caused compression of the inferior vena cava resulting in thrombosis of the vein and death from complete arrest of the circulation. A case has been mentioned in which pressure of the isthmus was responsible for aneurysm in the first part of the abdominal aorta.

In exceptional instances it is possible to palpate as a smooth oval mass the isthmus or bridge between the two halves of a horseshoe kidney, but in the majority of cases pyelography is of greater value in the diagnosis of this condition. By the latter procedure, several anatomic features which are strongly suggestive of horseshoe kidney are demonstrated. These are: overlapping of the calices because of the anterio-posterior direction of the pelvis due to the incomplete rotation of the kidneys which occurs in these cases, the closer approximation of the two pelves as a consequence of which they lie nearer to the median line, the anterior and slightly upward direction of the hilum and the high insertion of the ureter with a sharp, ureteropelvic angle. The importance of the injection of the media used for pyelography through a catheter which is introduced but a short distance into the ureter is worthy of emphasis. By this procedure the presence of one or more additional pelves or ureters will be demonstrated, and its value in that type of anomaly in which the ureters unite before reaching the bladder is obvious.

Byron Robinson, in a study of sixty specimens of horseshoe kidneys observed that 93 per cent possessed bilateral ureteral unicity, 3½ per cent bilateral ureteral duplicity, and 3½ per cent central ureteral unicity. No case of unilateral ureteral duplicity was found.

Fusion of two kidneys is always accompanied by some displacement, and palpation or ordinary radiography will disclose the fact that they are situated at a lower level in the abdomen. A mass in the upper abdomen, deformity of the renal pelvis, and an abnormality in the course or number of the ureters, is almost pathognomonic of this anomaly. In the diagnosis of horseshoe kidney, the presence of abnormalities of the genital and other urinary organs with which it is frequently associated should also be remembered.

DIFFERENTIAL DIAGNOSIS

A horseshoe kidney is to be differentiated from several pathological conditions of the abdominal cavity, the most common of which are tumors of the pancreas, tumors of the intestines, tumors of the omentum, tumors of the retroperitoneal connective tissue and inflammatory exudates.

Tumors of the pancreas are usually cysts or carcinomata. Pancreatic cysts are often associated with a history of trauma followed after a brief period by the development of a tumor in the upper abdomen. Others not associated with injury begin with severe pain which is followed by the development of a tumor. A third group develops more slowly, and is frequently associated with chronic inflammatory conditions of the pancreas. The tumor is palpable as a smooth globular mass between the ensiform cartilage and the umbilicus. It usually lays between the stomach and the transverse colon, but may be above or below them. Pancreatic cysts are most often found in the median line, otherwise more commonly to the left than to the right. Primary carcinoma of the pancreas is infrequent. Jaundice is common. The tumor is usually situated in the median line, occasionally on the left and rarely on the right side. It is usually dense, often nodular, and it is immovable. Dull pain and digestive disorders are frequent.

The majority of intestinal tumors are in the sigmoid, rectum, or cecum. If the tumor, which is

usually a carcinoma, is high in the intestine, obstruction is frequently present, and blood is found in the stools. These growths are more or less mobile at first. Inflation or bismuth enemata usually localize the tumor. Duodenal tumors give rise to pain in the right hypochondrium. There may be vomiting of bile and pancreatic fluid or jaundice. Unlike carcinoma, a horseshoe kidney is usually smooth and regular in outline. Solid or cystic tumors of the omentum are usually mobile and are not painful. Lipomata and sarcomata occasionally develop from retroperitoneal connective tissue. They are immobile and dense in character. Inflammatory exudates are usually accompanied by general disturbances.

SINGLE OR SOLITARY KIDNEY

Morris found in Gray's Hospital reports 1 single kidney in 4632 autopsies, in Middlesex Hospital reports 2 in 6536 autopsies, in St. Bartholomew's reports none in 3800, and in the autopsy reports of

Fig. 1.—Pyelogram of right kidney, showing over-lapping of calices.

the Hospital for Sick Children 1 in 936. Peterson found 1 in 1500 autopsies, Sangali 3 in 5348, Menzies 2 in 1790 autopsies. Lowsley, Kingery, and Clarke found congenital absence of the kidney twice in their 4215 consecutive autopsies. Summarizing the above reports, we find that a single kidney has been found once in about 1259 autopsies. They occur somewhat less frequently than this, as some of the reports include atrophic and rudimentary kidneys. At the Mayo Clinic a solitary kidney was found once in every 142 kidney operations. They occur almost twice as frequently in males, and more often on the left side. There is a marked tendency to pathologic changes in single kidneys. Nephritis, calculi, tuberculosis, hydronephrosis, and pyonephrosis in the order mentioned have been most frequently found.

DIAGNOSIS

Ordinary radiography will reveal the absence of a kidney shadow on one side, and in the majority of instances a single ureteral orifice will be found on cystoscopy. While the frequency and volume of the ureteral spurt is usually greater in congenital single kidney, and increased kidney function is also suggestive, it is important to remember that the ureters from normal kidneys occasionally join before reaching the bladder. On the other hand, the presence of two ureters, both of which discharge urine, does not necessarily indicate that there are two kidneys. Pyelography or insistence upon repeated radiography until the kidney shadows are visible or the absence or displacement of one kidney satisfactorily proven is necessary in excluding a single kidney. While all of the above procedures are of importance, pyeloureterography is of greater value in the diagnosis of solitary kidney, as well as in all other abnormalities of the urinary tract. The number and course of the ureters is readily seen, and anomalies of the pelves are demonstrated. In this connection, Braasch has called attention to the fact that the pelvis of the congenital single kidney is enlarged in proportion to the increase in renal parenchyma, but is otherwise normal in outline, whereas in the acquired solitary kidney the pelvis is of usual size. The indigocarmine test is often of value when catheterization of the ureter or ureters and pyeloureterography is impossible. Malformations of the genital organs are more frequently associated with single kidneys than with unilateral fused or horseshoe kidneys, as in the latter anomalies fusion occurs after differentiation of the urinary and genital system has taken place in the embryo.

UNILATERAL FUSED KIDNEY

Morris found but one unilateral fused kidney in the autopsy records of 12,104 cases. Stewart and Lodge found one unilateral fused kidney in 6500 autopsies. Of 57 cases collected by Stein up to 1911, in which the sex was mentioned, 16 occurred in females, and 41 in males. In a study of the autopsy records, however, the fact that a greater number of males than females are available for this purpose is to be taken into consideration.

SYMPTOMS

The most common subjective symptoms of unilateral fused kidney are bearing down pain in the side of the abdomen, and constipation. If the kidney is situated at the pelvic brim, pain in the back and lower abdomen in women, most pronounced during menstruation, is often present. Vesical disturbances are not infrequent. An elongated kidney on one side can sometimes be palpated in the presence of this condition, and radiography shows the kidney at a lower level. Obstruction to the ureteral catheter will also be found at the latter point. Following distension of both pelves, pain will be felt on the same side. Pyeloureterography, however, is the only certain method of diagnosing unilateral fused kidneys. This procedure will demonstrate the unilateral position of both pelves, and will also reveal the abnormal course of the ureters. Stereoscopic pictures, following inflation of the colon or bismuth enemata, will serve to

demonstrate the retroperitoneal location of the mass, as well as the absence of intestinal involvement.

A unilateral fused kidney may be differentiated from carcinoma of the intestines by the absence of blood in the stools and by its smooth, regular outline. It is usually fixed, consequently it cannot be moved upward like a simple floating kidney or a movable liver or spleen. Following exposure, an unilater fused kidney is easily recognized by its form and size and the direction of one ureter toward the opposide side of the bladder.

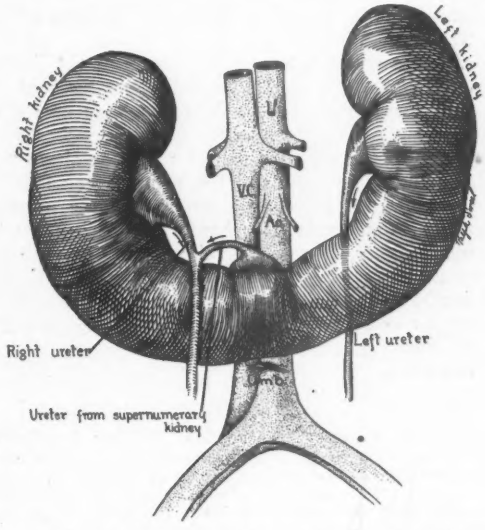
SUPERNUMERARY KIDNEYS

Supernumerary kidney is the rarest of renal anomalies. In a series of 24 cases, 23 of which have appeared in the literature and to which my own case has been added, 15 were on the left side, 7 on the right side, and but 2 in the midline. The sex was mentioned in 21 cases, 11 were found in females, and 10 in males. Two supernumerary kidneys are evidently extremely rare. Although Voigtel, in 1805, mentioned eleven or twelve writers who reported the presence of four kidneys, the only references to this condition since that time were cases reported by Monquoit and Oleson. The former found a kidney from seven to eight inches long placed transversely across the lumbar vertebrae, which had four pelves, ureters, arteries, and veins. In Oleson's case, the organ lay with the two extremities in the usual situation of the kidneys. The lower margins of what should have been the normal kidneys were continuous, with no apparent break in their structure. Two adventitious kidneys existed, turned with their hila directed obliquely outward and downward and their inferior margins continuing across the front of the aortic bifurcation. Each of these four kidneys was anatomically, and apparently functionally, perfect, with pelvis, ureter, artery and veins only differing from normal kidneys in fusing imperceptibly into each other.

Since the United States Marine Hospital report of a case of supernumerary kidney in 1885, other cases have been reported by Hyrtl, Wedensky, Mills, Israel, Gottfried, Depage, Hansemann, Rustschinski, Calabrese, Isaya, Tonkou, Cadenat, McArthur, Gavard, Monquoit, Oleson, Cheyne, Wilcox, Kretschmer, Samuels, Kern and Sachs, Newman and Barlette. In Kretschmer's case the supernumerary kidney contained thirteen stones. It was found on the left side in a woman 27 years of age. It lay beneath the left kidney, and had its own blood supply and a ureter which united with that of the left kidney. The latter was also full of stones. Samuels, Kern and Sachs reported a case of supernumerary kidney, the ureter of which opened into the vagina. The organ was situated on the right side. Gavard reported a case in which a supernumerary kidney was imbedded transversely in front of the lumbar spine. This central kidney had its own ureter, which joined that of the right kidney. Wilcox reported a case in which the three fused kidney elements were represented by an irregular, nobular mass in the midline at the level of the brim of the pelvis. Three separate pelves which fused into one huge, dilated pelvis were present. Newman mentioned a case in which a pear-shaped supernumerary kidney was situated close to the upper margin of the left kidney. Cheyne reported a case in which the patient suffered from definite abdominal pains, indigestion, and a general hysterical condition. When the pain was severe, there was a diminution in the quantity of urine passed. He thought that the symptoms were due to mobility of the kidney, with slight pressure on or kinking of the ureter.

CASE REPORT

My patient, a married woman 23 years of age, complained of chronic constipation, backache, most pronounced in the lower lumbar region, general weakness and a "tired feeling" on exertion. She had suffered from constipation, which was severe enough to require a laxative every other night, for three years. The other symptoms were of one year's duration. The backache was relieved by rest in bed. It was worse during the menstrual period. The latter was accompanied by severe cramps in the lower abdomen. Six weeks before entering the hospital she had remained in bed for three weeks. After getting up she flowed for two weeks, the last three days of which she spent in bed. Abdominal examination was negative except for the presence of a firm, smooth, oval mass about the size of a large



hen's egg, a little to the right of the midline and just above the umbilicus. It was slightly movable and gave the impression that it might be connected with the right kidney. It was hardly sensitive to pressure, although manipulation occasionally caused sharp pain. Aortic pulsation, more forceful over the inner half of the mass, could be detected. The pelvic examination was negative. Examination of the gastro-intestinal tract was also negative. The urine was chemically and microscopically negative, and the patient had never complained of any urinary disturbances. Cystoscopic examination showed a normal bladder sphincter, mucosa, and ureteral orifices. The latter were readily catheterized to pelves which were but slightly displaced downward. Kidney function was slightly increased on the right side. A pyelogram of the right kidney pelvis revealed marked overlapping of the calices. An abnormality of the kidney or adjacent structures was then suspected, and an exploratory laparotomy deemed advisable.

The abdomen was opened through a right rectus incision, and the posterior peritoneum incised over the most prominent portion of the mass. A kidney with normal pelvis and ureter was then seen lying transversely across the lumbar vertebrae. The hilum was directed upward, and the ureter ascended about 1½ cm., then turned to the right, descending about 1 cm., where it fused with the right ureter. Palpation disclosed the fact that both poles of this

kidney fused imperceptibly with the lower poles of the right and left kidney, the entire structure thus resembling the horseshoe type of kidney. Further exploration revealed an appendix which showed evidence of previous inflammation and a cystic ovary. Both of these structures were removed. Following operation, the patient's symptoms were somewhat improved, but she still complains of pain in the hypogastric region, worse during menstruation.

There are no characteristic symptoms attributable to a supernumerary kidney. The condition is usually discovered following investigation because of some pathological condition with which it is associated, as like all anomalous organs they are more susceptible to disease. The presence of additional ureteral orifices in cases of supernumerary kidney is suggestive, but without pyeloureterography a positive diagnosis of supernumerary kidney is impossible.

Pyeloureterography, with the catheter just inside the right ureteral orifice, would probably have revealed the supernumerary pelvis and ureter in this case, but it has been impossible to gain the patient's consent to a repetition of this procedure. Pyeloureterography following the administration of sodium iodide by mouth failed to disclose these structures.

After a somewhat extensive search of the literature, I have been unable to find a single record of transverse fusion of three kidneys. This case differs from a horseshoe kidney, in the number and location of the ureters and in its position above the umbilicus. The right and left portions of an ordinary horseshoe kidney are lower than the normal position, and the inferior border of the isthmus is seldom higher than the sacral promontory. If one chooses to classify this case as a horseshoe kidney, it is still unique, as a careful review of the literature reveals no instance of a third ureter connected with the isthmus of a transversely fused kidney.

Flood Building.

DISCUSSION

LOUIS CLIVE JACOBS, M. D. (Flood Building, San Francisco)—Dr. Stevens' paper is of especial interest, as it emphasizes the prevalence of anomalies of the kidney. This is of great importance in the diagnosis of abdominal tumors, inasmuch as malformation of the kidney is usually associated with considerable nephritic displacement.

The clinical diagnosis of a bilateral fusion of a supernumerary kidney is practically impossible. A cystoscopic study, with the insertion of the opaque catheter and the introduction of fluid into the kidney pelvis, in conjunction with the roentgenogram, is the most practical way of determining kidney pathology, and in Dr. Stevens' case was of material value in the diagnosis of the kidney anomaly.

Malformations of the kidney have often been mistaken for malignant growths. Where it is absolutely necessary to elucidate a differntial diagnosis, the procedure to employ is exploratory laparotomy. However, if in the investigation of a kidney tumor-mass one feels justified in treating the kidney surgically, he must first ascertain by direct catheterization and functional tests whether there is another healthy kidney present, independent of the mass.

Anomalies of the kidney are embryologically associated with anomalies of the ureter, and a complete physical examination usually reveals some abnormal embryonic development elsewhere, more often in the urogenital organs.

It is not infrequent with the better-trained cystoscopist to find a greater number of multiple ureteral orifices with two ureters running to a kidney, where formerly this was thought of as a very rare condition. And though there has been, as Dr. Stevens states, but twenty-three cases reported, I am sure there are a large number of other cases which were passed unrecognized, due to incomplete investigations.

BURNETT W. WRIGHT, M. D. (527 West Seventh Street, Los Angeles)—This very interesting and authoritative paper should attract new interest to kidney lesions, not alone from urologists, but from those men who do abdominal surgery. The frequency with which the abdominal cavity is opened for the relief of symptoms originating in the kidneys or ureters, behind the peritoneum, is well known, and in every case in which there is the least doubt, a careful cystoscopy and kidney study should be insisted on. Palpation of both kidneys and along the course of both ureters should be a part of every laparotomy in which there is any question of the cause of symptoms, and if this were done with the care with which the average surgeon investigates the appendix, the gall-bladder, the liver, the pancreas and the duodenum, while working within the abdominal cavity, many anomalies and displacements of the kidney that are being overlooked would be recognized.

Many anomalous and misplaced kidneys function perfectly during life and are not discovered, unless at autopsy or by palpation from within the abdomen during an abdominal section. One of the frequent ways by which they attract attention is by interfering with pregnancy. This is especially true of the misplaced kidney. The enlarging uterus, by pressing on the deformed or misplaced kidney, interferes with drainage and predisposes to retention and infection.

A. S. MUSANTE, M. D. (916 Kearny Street, San Francisco)—It is a pleasure to respond to the request for a discussion of this paper. Dr. Stevens is to be congratulated for having encountered a kidney condition which has all of the characteristics—relating to number, shape, and position—of these anomalies, instead of only the usual one or two, and has not before been recorded in medical annals, and deserves our praise for the studies and the investigations of the literature pursued in preparing his essay. The author's opening statement, "that anomalies of the kidney are more frequently encountered than those of any other organ," should be compared with Keyes' declaration: "Abnormalities of the kidney are very rare" (Urology, 1917).

The case itself is an example of the advantage of the abdominal approach to suspected kidney lesions. The only missing evidence was a pyelogram of the extra organ, which would probably have been obtained "with the catheter just inside of the ureteral opening." The remembrance of this case will impel us to carry out a more thorough survey of the kidney regions in abdominal surgery whenever possible.

E. SPENCE DE PUY, M. D. (Dalziel Building, Oakland)—Dr. Stevens is to be congratulated upon his rather extensive assemblage of references to kidney anomalies, and upon his careful consideration of the same. The question occurs to me, however, and apparently from the concluding sentence in his paper the same thought is in Dr. Stevens' own mind, that possibly the case he reports is not, after all, that of a supernumerary kidney.

Is it not more likely, and the embryology of kidney development would seem to bear out the idea, that the case under consideration is that of a fused horseshoe kidney with reduplication of the pelvis on the right side? This, though, is a question which may not be determined by an ante-mortem examination.

DOCTOR STEVENS (closing)—It is only within the last few years that the comparative frequency of kidney and ureteral abnormalities has been appreciated by the urologist. Their recognition is due to improved diagnostic technic and the increasing popularity of pyelography. A knowledge of the presence of these conditions is of obvious importance to the surgeon when operative procedures are contemplated.

A supernumerary fused kidney could have been produced in our case by the development of two closely approximated renal buds from one of the Wolffian ducts, the fusion occurring because of the close contact of these buds and union of their metanephric substance.

Any man that is faithful can overcome the disadvantages of a country practice, and if he cannot there is something radically wrong with him or with the community. He is entitled to good pay for good service.—Austin Flint (Iowa Medical Journal).

ESOPHAGEAL DIVERTICULA

By E. C. MOORE, M. D., Los Angeles

Diverticula of the esophagus are much more frequent than was formerly appreciated. They ought to be recognized more often and earlier in the course of the disease than they are.

The clinical picture, if formed from all the evidence, is clear and definite.

Good surgery is the treatment of election. The mortality has been much reduced by wider knowledge of what to do and how to do it.

DISCUSSION *by George Thomason, Los Angeles; Charles D. Lockwood, Pasadena; and John Hunt Shepard, San Jose.*

IN tracing the course of the esophagus, we recognize at its junction with the pharynx, in the median line posteriorly, a union of the oblique muscles of the pharynx and the transverse circular muscles of the esophagus, where there is a small area not covered with musculature, but only a subcutaneous layer. At this point, most of the diverticula occur, due probably to a more than ordinary weakness or a congenital absence of muscle-fiber, which, in the act of swallowing, permits a pushing out of the mucosa and submucosa through this small triangular defect.

The congenital nature of the disease has been based on the analogy to other diverticula of the gastro-intestinal tract; the improbability that the diverticulum on the posterior surface of the esophagus is caused by pull or pressure, because the spinal column offers a rigid background and would prevent any such factors from coming into play; the condition is completely developed when the symptoms first begin to appear. This may be demonstrated by x-ray examination and by gurgling sounds on swallowing, caused by the entrance of air and fluid into the previously existing space of the diverticulum; there are no manifestations in earlier life because the tissues are elastic, but the turgor is lost later in life (at 40), and symptoms may suddenly appear as a result of the condition which has existed for a long time, but has been dormant; and upon the fact that there is no recurrence after radical operation and the characteristic preference for the male.

In the weakened triangle (Lannier-Hackerman area) we find the pulsion or pressure type of diverticula. It is rare to find a true pressure type in any other part of the esophagus.

Traction diverticula may occur at any point, but usually are within the thoracic part of the esophagus and are caused by some previous irritation such as the cicatrix of a broken-down lymph gland or some other pathological condition of the mediastinum pulling on the esophagus. Zenker defines the traction type as one "in which the wall of the esophagus has been dragged outward by an external force."

Beverman found in sixty cases that 73 per cent were due to tubercular infection and other diseases of the lungs, and that pericarditis was responsible for the remainder.

This traction diverticulum is small and usually located at about the level of the bifurcation of the trachea. It is not met with so often as the pulsion and probably occurs under tension. While it may be congenital, it is not progressive. Occasionally, it is incidentally found while passing the stomach tube or in x-raying the gastro-intestinal tract.

Ordinarily, we find diverticula of the esophagus considered under these two heads. Halstead classifies them as:

A. Pressure or pulsion which include:
   1. Those of the pharynx.
   2. Those of the pharyngo-esophageal junction.
   3. Those originating near the bifurcation of trachea just above the left bronchus.
   4. Those deep-seated, whose orifice is a little above the diaphragm, with the fundus of the sac resting on it.

B. Traction diverticula.

C. Traction-pulsion diverticula.

Treatment from a medical standpoint applies particularly to the traction type, and is directed to the primary lesion that is responsible for the production. If mucus or decomposing food is present, lavage is indicated. The patient is advised to avoid coarse food and alcohol. The pulsion type eventually becomes surgical. The larger may prove to be fatal as they increase in size, and as the amount which they can contain not only increases but becomes a source of danger and discomfort from decomposition of the contents, swallowing becomes more and more difficult until, in the extreme picture, the patient in his effort to swallow simply fills up the diverticulum, and little food, even liquid, passes into the esophagus, and unless relieved, starvation may result. Sometimes building up by feeding through a small stomach tube or catheter is necessary, or, in extreme cases, by a gastrostomy. The pouch fills from above; it is oval and the outline distinct. Its location is cervical, posterior or posterolateral in relation to the esophagus, and the diverticulum follows the movement of deglutition.

Percussion may suggest the diagnosis. The use of the catheter and sound may supplement this evidence. The method of guiding the sound by a silk cord, swallowed, and allowed to pass into the intestine until anchored there, is often resorted to. Radiologic examination is necessary.

It is possible to mistake the condition for a high spasm of the esophagus; also it may be interpreted as a dilatation above a constriction and not a sac lying along the esophagus. Different radiograms will promote distinguishing data. The ejection phenomenon is of diagnostic value; this consists of emptying the contents of the diverticulum into the esophagus on deglutition when no food is given. With the possible existence of a diverticulum being kept in mind, together with characteristic history and typical radiographic findings, its recognition often is easy without sounding or esophagoscopy.

The neck of the pulsion diverticula seems always to be small, but the pouch may be large enough to hold ten or more ounces. It gradually enlarges and develops a semi-inflammatory thickening of fibrous tissue, at first in mid-line growing down in front of the spine, then bulging to the sides, increasing usually more to the left. The large sacs grow into the mediastinum and become intra-thoracic; here they increase still more rapidly. Walls of the large

sacs are thinner than those of the small, less fused and easier to separate.

A diverticulum in the esophagus has the same effect as a foreign body which irritates the parts. Symptoms depend upon the size and position. There is a tendency to cough and other signs of irritation, on account of the proximity to the larynx. Clucking and gurgling sounds occur on speaking and swallowing. There may be a sudden explosive emptying of the pouch if the mouth is wide, and there is a strong muscular contraction. There is dryness of the pharynx, difficulty in swallowing, and regurgitation of food. At times food suddenly flows out of the nose when the patient bends over, pieces remaining wedged in the esophagus and not passing down. The patient is obliged to take but small quantities of food into the mouth at a time, swallow completely before taking more food, and may use various maneuvres of position and pressure to facilitate deglutition. There is excessive secretion of mucus, the breath is bad from decomposed food and constant indigestion. If the pouch is large and filled the patient complains of a lump in the throat. It may be so large as to cause serious respiratory symptoms with increased difficulty in swallowing, relieved by induced vomiting. Pain is not usual unless ulceration occurs.

Fully developed symptoms comprise obstruction, dysphagia, pain, regurgitation, especially when the body is prone or inclined forward. Fetid breath, congested face, cervical tumefaction, gurgling, compression signs, such as dyspnoea, neuralgia, and voice changes are frequent symptoms. The patient is usually nervous, irritable, and choleric. Occasionally, he presents only symptoms of psychosis, and only by exhaustive study is diverticulum discovered.

Medical treatment is often demanded, but is never fully satisfactory. It seeks to keep the pouch empty and overcomes stenosis.

In the pulsion type, surgery is indicated. Good results are obtained. Formerly, surgery was attended with great risk, and performed only to meet an emergency. Local anesthesia was used. The danger then lay in the way the sac was isolated and amputated. Many of them leaked into the raw tissues; sepsis and mediastinitis followed.

There are various methods for eliminating the sac. It can be drawn up by forceps and pushed down inside the esophagus, providing adhesions do not prevent. Other methods include external removal, change of position, and obliteration. The great danger is from leakage and infection, suffocation from the contents of the sac pressing with a subsequent broncho-pneumonia.

If a general anesthetic is used, the sac must be well emptied before attempting surgery, so as to prevent any chance of the contents pouring into the trachea, which would probably produce suffocation or cause a broncho-pneumonia.

Operations may be done in one or two stages. When the sac is small it matters little what method is chosen, but when large and intra-thoracic, the two-stage operation is advisable.

The incision usually recommended is parallel to the anterior border of the sternomastoid muscle. The collar incision is preferred by many. If one-third of the mass is behind the anterior border of the sternum, and the skin and the platysma muscle is dissected both ways from this, there are few vessels to ligate. By blunt dissection and retractors, the sternomastoid and omohyoid muscles and the anterior jugular vein and common carotid artery are drawn back. Anteriorly, the sac is seen just behind and extending below the cricoid cartilage. The sac is light-colored and has a small plexus of veins over it. The large ones are drawn out with more difficulty, and much care is needed to keep from rupturing the sac. There is not much difficulty in amputating any of the sacs, and suturing at the junction with the esophagus. Two rows of chromic catgut and a small rubber drain are usually placed. Some elevate the sac and fix its fundus to the hyoid bone, to prevent infection, cellulitis, and fistula. Murphy delivered the sac unopened, then twisted it; later amputating, closing fistula and invaginating the sac by sutures.

Only a few hundred operations are on record. The mortality has been given as high. In a series of 200 cases there were reported 16 deaths; in 109, 12; and in 100, 10 deaths and 28 fistulas. Judd reports 3 deaths in 75 cases. The reported mortality of 16.6 per cent includes those cases operated on before rigorous asepsis was observed.

In selecting a method of operation, we want the one where there is least danger from infection, cellutis, and fistula. I believe the most satisfactory method is where the sac is fixed to the skin incision and left unopened, with its neck ligated to slough out of the packed wound and be removed a few days later. Excellent results have been obtained with this procedure. Owing to the lack of time, I shall cite only my most recent operative case.

A man, age 63, in addition to an esophageal diverticulum, had cataract on each eye. He had seen an eye surgeon for the removal of the cataracts who, on examination, felt that the irritation of the patient's throat with cough and difficult swallowing would interfere with the success of the cataract surgery by breaking open the eye with ensuing disastrous results; therefore, the case was referred to me for treatment of the esophageal condition before further attention to the eyes. The patient had had trouble in swallowing his food for twenty-six years. Within a few minutes after eating, food would be regurgitated. The throat was much irritated, and it seemed as if there were a lump there. The initial symptoms followed diphtheria twenty-six years before, when he believed his throat to be partially paralyzed. The condition never disappeared and became progressively worse during the past eight years. In ten years he had lost thirty-five pounds, was very nervous and had had considerable sore throat, for which the tonsils had been removed.

Radiographs showed a diverticulum of the esophagus. The operation was performed under general anesthesia. The diverticulum was found to arise from the left side of the cricoid cartilage. It was 6 x 3 inches in size, and the neck was about half an inch in diameter. The operation consisted in dissecting and freeing the sac, bringing it out between the sterno-mastoid and sterno-thyroid muscles through a collar incision, with drainage into the sac.

On the sixth day the sloughing sac was amputated. The patient made a good convalescence and was out of the hospital on the eleventh day. A few weeks later the cataracts were removed.

These patients are not considered so rare as they were ten or fifteen years ago, nor as poor surgical risks. There is wider knowledge of the possibility of their existence and a better acquaintance with the typical syndrome they produce. If the patient is in good physical condition, little fear is warranted in making a favorable prognosis. If the patient has become emaciated from inability to swallow food, then we have the task of building him up by feeding, and getting him in fit condition of nourishment before operating. In extreme cases a gastrostomy may have to be done preceding treatment of the diverticulum.

A surgical technic that will prevent leakage and infection is the next step. This has been accomplished, as stated before, by bringing the sac through and attaching it to the skin incision; ligating and amputating later.

With the above points in view, it would seem possible to perform radical operation in these cases of esophageal diverticulum with a small mortality rate, and with ultimate good results.

Merchants National Bank Building.

DISCUSSION

GEORGE THOMASON, M. D. (Hollingsworth Building, Los Angeles)—Doctor Moore has covered the ground so thoroughly that there is little left to be said. I have had a number of these patients in the past few years. One sign which has not been mentioned is that of a change in the contour of the neck, especially, of course, in the larger and more fully developed diverticula. As the patient swallows and the diverticula fills, there is a marked bulging of the neck on that side. With the regurgitation of the food and the emptying of the diverticula, the neck promptly returns to its normal appearance.

The chief reason why the traction diverticula are practically never of surgical importance, is that the opening into the esophagus is usually the lowest part of the diverticula and, therefore, empties readily and does not tend to increase in size or embarrass the function of the esophagus.

So far as operation is concerned, my personal experience has been with the Sippey-Bevan operation of puckering the sac and folding it upon itself accordion-like, thus collapsing the diverticula and plugging the opening with the sac itself.

One fundamental feature for success in any type of operation is to either keep the sac entirely closed as in the Sippey-Bevan operation, or do the two-stage operation of the Jackson-Gaub-Judd type. The absence of any serous coat on the esophagus means almost certain failure so far as immediate closure is concerned, and to open the sac before adhesions have formed around the site of operation is to court disaster from acute mediastinitis.

CHARLES D. LOCKWOOD (Citizens' Bank Building, Pasadena)—I wish to report briefly a case of diverticulum of the esophagus upon which I operated over twenty years ago. I think it is one of the first cases in which the x-ray and an opaque solution were employed for diagnosis.

The patient was a woman about 50 years of age, with a very large diverticulum in the cervical region. An x-ray was first taken with a stomach tube in the esophagus, through which a copper wire had been passed. The tube could not be passed into the stomach, but coiled up in the sac of the diverticulum. Later pictures, with a bismuth mixture filling the sac, gave an excellent outline and revealed the size of the diverticulum.

The patient became so emaciated from regurgitation of food that a gastrostomy was done before attempting removal of the diverticulum. She gained thirty pounds in weight after gastrostomy. The sac was then exposed through the neck, and partially removed. It was so large that complete removal was impossible. The remaining portion of the sac was plicated and its cavity greatly reduced. The patient remained well for several months and was able to swallow normally, but the diverticulum recurred and she finally died of starvation. In such extreme cases I believe gastrostomy is of great value.

JOHN HUNT SHEPARD, M. D. (San Jose)—A year ago, at our meeting in San Francisco, I read a paper before this Section on this same subject and reported two cases seen during the previous two years. Since then I have seen another case. I am confident that this condition is not as rare as we formerly considered it. These diverticula should be recognized before they attain a large size and seriously interfere with health. There is one point mentioned by Dr. Moore which I wish to emphasize, as I considered it the most important point in technique in all esophageal work. I refer to the use of the silk thread. With a little patience and perseverance it is possible to get the thread through any and every incomplete esophageal obstruction. Though at times it may be advisable to follow the thread with a linen fish-line, or even introduce over the thread a fine piano wire, once the silk is anchored in the intestine the continuance of the examination and treatment is rather easy. By the use of this technique, gastrostomy is practically never necessary. In all cases where caustics have been swallowed, the silk thread should be introduced before cicatricial contraction begins and kept in place until the degree of stenosis is determined. I agree with Dr. Moore that it is preferable to use a two-stage operation in all cases of large diverticula, but as these cases become recognized earlier, there will be fewer requiring the two-stage method.

ROENTGEN THERAPY OF UTERINE MYOMA DURING PREGNANCY

By JOHN D. LAWSON, M. D., *Woodland, Calif.*
(From the Department of Radiology, Woodland Clinic)

A review of the literature. Full report of one case. For literature reviewed, see Index Medicus or Cumulative Index, A. M. A.

Discussion of the value, indications and contra-indications of extensive roentgen treatment in the pregnant woman.

Pelvic irradiation of females who may become pregnant should be done with much care in selection of cases, and either only very light dosage employed or complete castration effected.

Pelvic irradiation of pregnant females should not be done except where there are very extenuating circumstances, and in any event the patient and her husband should be informed of the possibility, if not probability, of a deficient child.

Irradiation during the later months of pregnancy, if conclusions may be based on the results in six cases, is less injurious to the fetus than irradiation during the early months.

It would seem that the longer the elapse of time between irradiation and subsequent pregnancy, the greater is the probability of a normal child being born.

Radiography should be limited during pregnancy to the minimum.

Roentgen abortion or castration should never be performed except where there are definite reasons why the ordinary surgical procedures should not be followed.

There seems to be little difference between the actions of long and short waves on ova, either fertilized or unfertilized.

Additional evidence and opinions contained in the discussion by Francis B. Sheldon, Fresno; Kurt F. Behne, Los Angeles; Frederick H. Rodenbaugh, San Francisco.

THE selection of title was made hurriedly and unfortunately. Facts which should be brought out in reference to irradiation of the germ cells previous to fertilization, as well as other pelvic conditions treated during pregnancy by irradiation, are not included in the title, but I feel that it is best to

make the title a misnomer rather than to limit the scope of this paper conform to it.

Certain results observed by different men on irradiation of the male and female cells previous to their union have a direct bearing upon the result observed after irradiation following impregnation, and a consideration of one without the other would be incomplete.

The first work showing effect of irradiation upon fertilization of cells was probably done by F. Shaudinn in 1899, on protozoa. His article, however, did not cover the subject with any great accuracy, nor were his observations of any great value, except as a pioneer in the field.

Bohn, in 1903, described deformities and arrests in development of frog embryos resultant upon irradiation. His work was quite complete and well controlled, and is the first real scientific effort along this line.

Gilman and Baetjer, in the same year, reported results of experiments in which they irradiated the fertilizated ova of amblystoma. They noted particularly that there was at first an apparent stimulation in growth of the embryo and then a depression. There always was a resultant deformity characteristically of the head and brain.

Much experimental work continued, especially under the observation of Hertwig and his school, who did extremely painstaking work, especially on the semen of frogs and the eggs of seagulls and various nematodes. This school verified the observation of Gilman and Baetjer, especially on the resultant skull and brain injury.

Baldwin working with frog ova in 1919, Bagg in 1920, and Little and Bagg in 1923, working with mice, noted deformities of the products of the irradiated ova.

Bagg, in his work, irradiated female mice previous to impregnation, shortly after fertilization, and during the latter portion of the pregnancy, and found similarity in the results obtained by the three methods. He used in his experimental work radium emanation in three ways: first, as a gamma ray pack; second, subcutaneous injection; third, intravenous injection. The results were comparable in all three methods, the deformities observed consisting chiefly of injury to the head and neopallium and numerous areas of subcutaneous extravasation. Abortion was frequent in these cases, especially when the irradiation was given during the early part of the pregnancy. There did not seem to be any difference in the end-result of the irradiation of the female before fertilization and irradiation during pregnancy. The most common deformities were noted in the brain and eyes. Blindness being a very prominent feature of all these experiments.

Little and Snyder, in 1923, continued the work of Little and Bagg, but their observations did not allow them to verify the latter's work.

From a clinical standpoint, probably no therapeutic pelvic irradiations were given during pregnancy until 1914. No observations were registered in the literature until 1920, when Ashenheim reported a case in which the patient was given five irradiations for myoma between the second and the sixth months of gestation. The fruit of the pregnancy was a male child delivered at eight months, underweight and underdeveloped, showing a definite microcephaly, aplasis of the right optic nerve, atrophy of the left optic nerve, neuroretinitis, strabismus, mystagmus, and imbecility. This child was followed through the age of 6 years, and was definitely slow in development. The irradiation in this case was evidently of the short wave type, as the treatments were one hour each and included both a posterior and anterior field of application, other factors used not being noted.

Stettner, in 1921, reported a case of treatment for myoma during the second month of pregnancy, with the resultant delivery at eight months of an underdeveloped child, weighing 1850 grams, showing hypospadius, strabismus, neuroretinitis, and definite mental changes. At 2 years of age the child could not speak. The dosage in this case was also probably of the deep therapy type, copper filtration being used, and the castration dose of Seitz and Wintz being administered.

Berkeley, in 1921, reported a case of treatment of carcinoma of the cervix in a pregnant woman, the irradiation being administered in the sixth month of gestation. The patient was delivered at term by hysterotomy, a normal viable child being obtained. The only abnormalities noted were two bald spots on the child's head, corresponding to the site of application of the radium. This child was followed to 7½ years without any defects being noted, the hair coming in shortly after birth. Radium was used in this case, and the dosage totaled 3712 mgh., evidently chiefly gamma rays being used.

Field, in 1922, administered heavy irradiation during the sixth month of pregnancy to a patient with carcinoma of the cervix. The fetus was delivered normally in the eighth month, was apparently normal in all respects, except that it weighed but four pounds (1.8 kg.) at birth. At the end of three and one-half years reports indicated it was a healthy child. The treatment in this case consisted of 7320 mgh. of radium, only gamma rays being utilized.

Bailey and Bagg report two cases of pelvic irradiation during pregnancy. The first had carcinoma of the cervix on which both bare emanation tubes and gamma pack were used in the sixth month of gestation, the patient being delivered by hysterotomy for eclampsia in the eighth month. The child weighed four and one-half pounds (2 kg.) and was apparently normal, but died in ten weeks of pneumonia.

The second patient referred to in this article had an epithelioma of the vulva and was treated with both bare tubes and gamma radiation in the fifth month of gestation. A normal child was delivered at term by hysterotomy and was living and well at time of report.

These are the only authentic records of therapeutic pelvic irradiation during pregnancy which I have been able to discover. There is, of course, the work of Archangelsky, who in 1923 reported a series of therapeutic abortions chiefly for pulmonary tuberculosis. Ten cases, the duration of pregnancy being from one and one-half to four months, were

treated. In seven of the cases abortion resulted. The remaining three were not successful within the time observed, although none of them was allowed sufficient time to obtain a definite result, operative interference being instituted in each case shortly after the last treatment. Three pregnancies were noted in the series after abortion, but the results of these pregnancies were not noted. The factors used by Archangelsky were as follows: 2 Ma., 55 Kv., 1 mm. al, distance and time not stated, but an average dosage of 45 H. was used, evidently bringing the irradiation under the classification of long-wave therapy.

Probably the most important feature of Archangelsky's series has not been included in his report, namely, the results of the three pregnancies following therapeutic abortion.

Considering now the influence of pelvic irradiation of the female not pregnant, but with a reasonable possibility or probability of future pregnancy, we have numerous articles referring to this subject, and while, as was stated at the beginning, the title itself is not sufficiently broad to cover this phase, nevertheless it appears to me that the consideration of this angle of irradiation cannot be divorced from that of treatment during the gestation period.

Stacy, in 1922, reviewed the cases handled at the Mayo Clinic, the total of which was 1113, in which pelvic irradiation for various conditions was employed in women of all ages. This, of necessity, would include a large number of cases where there was no possibility of future pregnancy; it also presumably included a certain number of cases in which definite follow-ups could probably not be obtained. However, in this series Stacy reports ten pregnancies, and of this ten, four of the children were normal, and at the time of writing were living and well. Three of the pregnancies resulted in a stillborn fetus. Two of them miscarried, and one was pregnant at the time the article was written. This would give a percentage of, at the most, 50 per cent normal pregnancies. Stacy does not note after what type or amount of irradiation these pregnancies occurred, so that the influence of the amount and type of irradiation cannot be taken into consideration.

Werner, in review of his cases, 990 for essential metrorrhagia and 552 for myoma, notes that there were twenty-four pregnancies following irradiation; of these twenty-four, thirteen were carried to term with a normal labor and a normal living child as a product. One case was delivered normally about one month before term, the child being viable and normal. Nine cases aborted between the second and fifth months, three of these abortions being induced. One fetus was delivered by hysterectomy before term, the reason for the hysterectomy not being given. It is rather difficult to analyze Werner's statistics, as four of twenty-four cases were artificially terminated and the end product could not be, or was not, determined.

Clark and Keene, in 1922, reported a series of 527 cases of pelvic irradiation for various conditions, with seven pregnancies following irradiation. Out of these seven cases, only two were delivered at term of a normal child.

In Polak's series of treatment of menorrhagia in young girls, two pregnancies have been noted, the end-result of these pregnancies not being stated.

Steiger reports one case of pregnancy following a two-year period of amenorrhea after irradiation, with delivery of a normal child.

Of much interest is the case of Bailey and Bagg in which irradiation, by radium pack of the intrascapular region for glioma of the cord was administered in the third month of pregnancy with hysterotomy at term, a viable child being delivered. However, the child had a spina bifida and a double club-foot, and died at the end of fifteen days. A second case in their report is one of Hodgkins' disease, in which irradiation was given during May and December, 1917. The areas irradiated were neck, groins, back and axilla. Pregnancy began at about the time of the last irradiation, and the patient was delivered in September, 1918. The child had a malformation of the head with the sagittal suture open, exposing the brain and died in eleven hours.

These writers also report two cases of pregnancy following fibroid irradiation. The first became pregnant about nine months after treatment and was delivered of a large stillborn child. The second became pregnant one and one-half years after treatment and was delivered of a normal child at term.

It is probable that in all the cases cited all types of irradiation, including short wave and long wave therapy, were used, as the statistics extend over a sufficient length of time to include the periods of prevalence of both types of treatment.

We are, of necessity, considering two different conditions: First, the effect of irradiation on germ cells previous to fertilization and second, the effect of irradiation on the fertilized ovum in its different stages of development.

Under the first consideration, in view of the various reports, we must believe that the ova will be definitely disturbed in a high percentage of cases by irradiation. It is the contention of the German school that this disturbance, if irradiation is pushed to a sufficient degree, will result in destruction of the ova and graffian follicles, and that by this destruction the common results are obtained on all menorrhagias, metrorrhagias, and fibromyomata. The French school contends that these results, especially in the case of fibroids, are due to direct action on the tumor cells and endometrium. They do not, however, dispute the ovarian effect manifested by the cessation of menses and the production of distorted feti.

The second part of our statement would seem to be the one most difficult on which to draw any definite conclusion, in that only six clinical cases have been reported. If we can base our conclusion upon animal experimentation, there seems to be much evidence that definite developmental defects will be noted following fetal irradiation in utero; especially there seems to be proven by Archangelsky's work the fact that the pregnancy may be terminated during the first three months by irradiation of ovum and uterus. These experimental findings have been quite well borne out by the clinical evidence in the case reports cited.

This would necessarily bring up this question:

To how much exposure may be subject pregnant patients in radiographic work? Horner does not believe that there is any danger up to 3000 m. a. s., this being the limit in 250 cases which he had handled, each of which had had some radiography. He has never noted any influence of the exposure on the fetus. I have personally, in a number of cases, made gastro-intestinal examinations on pregnant patients in the first to eighth month of gestation, with exposure, chiefly abdominal, varying from 2000 to 4000 m. a. s., without noting any effect upon the fetus. There is, however, one case in my series in which there was a total exposure of about 5000 m. a. s., including a gastro-intestinal examination and two stereoscopic sets of the pelvis and fetus, one at seven months and one at about term.

In this particular instance, the child's birth weight was six pounds (2.7 kg.), and her progress has been very slow. She is now eleven months old and weighs slightly less than sixteen pounds (7 kg). There are no definite mental symptoms nor findings, but the child does not conduct herself as does the average child at the same age. She does not speak, is rather apathetic, and dentition has also been delayed.

I have never associated the amount of radiographic exposure in this case with the child's deficiency. However, in view of the literature noted in the preparation of this paper, I believe that the exposure was a definite etiologic factor in the underdevelopment of this child.

We may only speculate on the influence of irradiation on the general development and well-being of the child noted above. However, it has been my good fortune to observe one case of particular interest in which I am certain x-rays played a part in the production of a child below normal—not permanently, but for the first two years. Acknowledgement is hereby made of the assistance of Dr. M. P. Burnham and Dr. F. H. Rodenbaugh of San Francisco in the handling of this case.

Mrs. A., housewife, age 29. April 10, 1921. *Family history*—Negative. *Past history*—Nothing of significance except the history of being a bleeder. *Menstrual history*—Began at thirteen, regular, with severe dysmenorrhea until a few years ago, flow lasts six to seven days, profuse first two days. Last period began December 22, 1920; was normal. Expected date of confinement September 29, 1921. *Previous pregnancies*—None. Married in 1914. *Abnormalities during present pregnancy*—Except for usual nausea and slight show of blood on March 14, patient was well until one week ago, when she had an attack of pain in region of left scapula, suggestive of acute pleuritis. Three days later pain appeared in pelvis and involved both sides, more marked on left, radiating down left leg. Pain was very severe and had to be controlled with morphine.

Physical Examination—Young woman of slight build, rather undernourished and anemic in appearance. General condition fair. Fundus about two fingers below umbilicus and pushed to right, where patient states it has been for some time. Mass about size of a large grapefruit felt just above pubis; firm, but not nodular. Another mass, movable, about size and shape of a medium-sized banana on left side attached low and extending upward. Abdomen very tender and sensitive, especially over tumor masses. *Vaginal examination*—Cervix hard, showing round tumor mass as above described; cervical canal not located; impossible to insert finger between tumor mass and pubis; small movable mass to the left and passing upward toward cul-de-sac, about three centimeters in length and two centimeters in diameter. The whole uterus has been pushed, or drawn, as the case may be, upward until its actual size cannot be exactly ascertained. The whole abdominal and pelvic structures are tender and sensitive to touch. *Diagnosis*—Multiple fibromyomata complicating a pregnancy of about four months. *Comment*—The factors in all irradiations were as follows: Ninety Kv—5 ma—12 minutes FSD 25 cm.—Filter 5 mm. al. Both anterior and posterior fields were used. *April 19*—After roentgen treatments on April 15, 16, and 18, patient states that pain has been markedly relieved. *April 24*—Pain has been absent for several days, no symptoms whatsoever. Patient eats and sleeps well, gaining in health. *May 10, 1921*—Patient states she has been free from pain for past two weeks; feeling very well, and can perform her usual household duties. Another irradiation given on this date.

Abdominal Examination—Abdomen only slightly tender, and that on deep pressure over tumor masses. Tumor mass which involves the cervix has decreased slightly in size. All other tumors decreased considerably. Patient was able to come to the office alone for examination. *May 12*—Irradiation. *June 8*—No pain since last examination, eats and sleeps well, no discomfort whatsoever. Fetal movement marked and vigorous. Patient states that she first felt fetal life on May 18. *Physical examination*—Shows cervical tumor mass about size of an orange, all other tumor masses not palpable. *Vaginal examination*—Cervix has not regained its identity, but is not so hard and not sensitive. Uterus is coming down farther into pelvis, two fingers can be inserted between tumor mass and pubis. *September 26, 1921*—Since last record, patient has had some pain, never extremely severe, mostly in left lower quadrant. She has gained from 115 pounds to 145 pounds in weight, and general condition has been good.

Physical Examination—Blood pressure, 120-60. Fundus to thirty-eighth week. Tumor mass rather soft at cervix, about the size of an orange. One tumor mass about 5 cm. in diameter, and 2 cm. thick just in front of head in left lower quadrant.

Operation—September 27, 1921. Median incision. Conservative Cesarean section, subserous myomectomy.

Findings—Uterus found twisted to left with right tubo-uterine junction anteriorly. Exploration revealed about eight small subserous myomata scattered over uterus, ranging in size from a pea to a walnut. One large myoma about 6 cm. in diameter and 9 cm. long at the left and including the cervix. In cutting through the uterine wall, it was noted that the thickness was greater than normal, and quite fibrous. A female child was delivered, and breathed before the cord was severed. Four of the largest and most prominent myomata, exclusive of the large cervical tumor, were removed, being easily enucleated. Due to the fact that patient wished to become pregnant if possible, and also that the blood loss had been much greater than in the average case, it was deemed advisable to allow the uterus to remain, as total hysterectomy would have been necessary to remove the large myoma.

Except for a moderate rise in temperature for the first seven days post-operative, her convalescence was uneventful and she returned home sixteen days from the time of her operation, in as good a condition as the average Cesarean section at this time. The child was apparently normal, weight five pounds (2270 grams), cried vigorously, nursed well and conducted itself as a normal infant should. The myoma remained regressed somewhat, but there was some pelvic pain, and further irradiation was administered on the following dates: October 30; November 8, 15, 23, 28; December 6 and 13, 1921; and January 17, 1922, the factors being the same as in the previous treatments except the time was decreased to eight minutes, and the voltage increased to 105 Kv.

The myoma following these treatments disappeared entirely, and the patient was in excellent health six months after delivery. Her menses had not appeared at this time.

The child at this time, however, was rather frail and anemic, and while there was no definite deviation from normal, she was below par physically and mentally.

All effort to establish direct communication with this patient since that time has been fruitless, but the observation of a colleague six months ago was to the effect that

the child was at least one year mentally and physically backward.

Dr. Rodenbaugh informs me that he has very recently observed both mother and child. The child, to all intents and purposes, is normal. The mother's general condition is excellent; her menses have returned and all myoma are absent, the uterus being small and fibrous.

CONCLUSIONS

1. Pelvic irradiation of females who may become pregnant should be done with much care in selection of cases, and either only very light dosage employed or complete castration effected.

2. Pelvic irradiation of pregnant females should not be done except where there are very extenuating circumstances, and in any event the patient and her husband should be informed of the possibility, if not probability, of a deficient child.

3. Irradiation during the later months of pregnancy, if conclusions may be based on the results in six cases, is less injurious to the fetus than irradiation during the early months.

4. It would seem that the longer the elapse of time between irradiation and subsequent pregnancy, the greater is the probability of a normal child being born.

5. Radiography should be limited during pregnancy to the minimum.

6. Roentgen abortion or castration should never be performed except where there are definite reasons why the ordinary surgical procedures should not be followed.

7. There seems to be little difference between the actions of long and short waves on ova, either fertilized or unfertilized.

DISCUSSION

FRANCIS B. SHELDON, M. D. (Mattei Building, Fresno, Calif.)—This very interesting paper shows much work. However, it seems to me that we have not yet done enough work on this subject to form very definite conclusions. Certainly, we will all agree that the fetus in utero should not be exposed to more than a minimum of ray with which we may accomplish the purpose for which we are making the exposure. We should not accuse the ray of results, when we do not uniformly get those same results following exposure to the ray. There is much filtration of the ray before it will reach the fetus in utero.

Very often in families where there are several children we will see one or another that will apparently be more backward than others. Or they may not grow and develop as rapidly as some of the others. Families in which this occurs may never have been near an x-ray. We have not determined the reason of this backwardness in one child and not in the others. Until this is determined, how are we to have perfect controls to determine the actual lesion that may be produced by the ray? There has been no fetal lesion reported following radiation that cannot be found where no radiation has been given. We have all rayed pregnant women and seen no ill-results in the child after delivery.

Until we have ruled out all the causes for the deformities and backward conditions in children, we should not be too hasty in placing the blame for these things on the x-ray. This does not eliminate caution in our work. In the case reported, can we definitely say that the condition for which the radiation was given was in no way responsible for the temporary backward development of the child? I do not believe that we should blame the ray for results that are more or less common without its use.

KURT F. BEHNE, M. D. (Soiland Radiological Clinic, Los Angeles)—The very interesting article of Dr. Lawson touches a problem which is, next to the treatment of cancer, the most important one in modern radiation deep therapy. It is an established fact that we are able to produce the menopause by roentgen or radium rays at any age of the patient without causing any damage to the skin or to any internal organs. The observation of patients who have undergone this treatment during the last ten years has proven that the after effects of the "radiation-menopause" do not differ from the bodily changes happening during the course of the natural menopause. The experiences in Dr. Soiland's Radiological Clinic corroborate this.

Provided a proper indication is present for an artificial menopause, we are justified in producing it by the rays without restriction in cases of women who are nearing the menopause. The question is whether we are generally entitled to cause the "radiation-menopause" in women who are still in the child-bearing age. Of course, we are allowed to stop the menstruation permanently by the radiation treatment in younger women as is the surgeon who extirpates both ovaries, provided there is a proper indication for this treatment. Another question is whether we are allowed to give the patient the radiation treatment in cases in which the surgeon is able to relieve the condition by a conservative operation, not disturbing the function of the ovaries, as, for instance, in cases of myomectomy. The experience of Gauss, Seitz, Wintz and other authors has shown that we can obtain, in proper cases, the same results as the surgeon with his conservative operation without endangering the life of the patient and without hospitalization, by the "temporary stopping of the menstruation" for a half year or longer with the administration of an adequate roentgen ray or radium dose. Within this time the diseased condition of the genital organs clears up (myoma, irregular and excessive menstrual flow, inflammation, etc.) and the patient again starts menstruating normally.

Up to the present time, there has been no damage observed in the children borne by women with regularly functioning ovaries after such a temporary stopping of the menstruation with the radiation treatment. The biological happening in the ovaries after the absorption of such a small radiation dose and the harmlessness of this dose as to future pregnancies can be easily explained. There is a difference in the radiation sensitiveness of the various stages of evolution of the ova. The primordial follicles are apparently much less sensitive to the rays than the Graafian follicles. The small dose of rays destroys the function of the Graafian follicles, but does not affect in any marked degree the less sensitive primordial follicles. As soon as the slightly disturbed primordial follicles have developed into Graafian follicles, the normal function of the ovaries starts again and the menstruation again appears. It is evident that the ripe ova which originate from these follicles have not been affected by the small radiation dose which was necessary for the temporary stopping of the menstruation. The appearance of an entirely normal menstruation shows also that there is no longer a disturbance of the function of the ovaries, and for these reasons any fears of finding either bodily or mental disturbances in a child born after such a radiation treatment of the mother are without foundation.

I agree with Lawson that the administration of rays should be done only in cases where it is properly indicated. I think, however, we should use the rays more extensively in cases of benign diseases of women in the child-bearing age instead of surgery.

The case of Stettner, referred to by Lawson, is well known to me, Professor Stettner, Erlangen, being a personal friend of mine. The patient had been treated in our University Women's Hospital in Erlangen, Bavaria. What Sheldon says in his discussion applies also to this case. It cannot be positively determined whether the disturbances of the child are due to the x-ray treatment or due to other unknown causes. A myomatous uterus as such is liable to cause failures of development in a child.

FREDERICK H. RODENBAUGH, M. D. (516 Sutter Street, San Francisco)—The patient referred to by Dr. Lawson was observed by me during treatment, and observed two years following treatment, shows two distinct phases of the effects of radiation:

First, the difficulty with moderate radiation in producing complete and permanent amenorrhea in young women. The restoration of the menses in varying periods of time following treatment is the rule in young women.

The child at this age does not present any marked mental or physical stigmata to differentiate it from the average child of its age.

I was most reluctant to treat a pregnant uterus, and was only induced to do so when an abortion was imminent, and while my personal experience is limited to two cases, neither of them received massive radiation, and I was fortunate in not producing deformities in the children. I believe that the administration of heavy radiation to pregnant uteri will conform to experimental data, and produce defective offspring. I do not believe that I will personally administer therapeutic doses to any pregnant uterus in the future.

It should be clearly understood, however, that there is no danger in the use of the ordinary diagnostic measure, and an impression should not be given to the general profession that harm will result from diagnostic procedures.

Doctor Lawson is to be congratulated on his clear presentation of the subject, and his careful review of the literature, and I fully concur with his conclusions.

Doctor Lawson (closing)—It has pleased me very much to have a full discussion on this paper, inasmuch as I have experienced very much interest in the collection of the data which has been put into the article.

I fully agree with Sheldon in his statement that there has been no fetal lesion reported following the irradiation that cannot be found where no irradiation has been given, but I really feel that the incident of fetal lesions is infinitely greater in cases where irradiation has been given than in cases not so treated. I think this opinion is verified by the literature.

Behne states: "Up to the present time there has been no damage observed in the children borne by women with regularly functioning ovaries after such a temporary stopping (by irradiation) of the menstruation."

This, however, is not borne out either by experimental data or by cases cited in this paper, especially the work of Clark and Keene, Werner and Stacy. There is no doubt that we are in the dark to a great extent as to results directly traceable to irradiation and the many variable conclusions bear witness to this fact.

DIPHTHERIA IMMUNIZATION

By Abraham Metzner, M. D., *Los Angeles*

The increased and increasing knowledge of diphtheria should be constantly utilized by all physicians.

It is as much a physician's duty to prevent his clients from contracting diphtheria as it is to treat them after they have it.

Preventive methods are simple and certain, and can be used by any intelligent physician in his office.

Discussion *by William C. Hassler, San Francisco; Langley Porter, San Francisco; Clifford D. Sweet, Oakland; Edgar Brigham, Dinuba; J. W. Morgan, Modesto; J. D. Dunshee, Los Angeles.*

DIPHTHERIA is still one of the most dreaded diseases and one of the most frequent causes of death in early childhood, and it is a fact that the discovery and use of antitoxin has materially reduced this death rate. The death rate has dropped from about 65 per cent to about 10 per cent. At this latter figure it has remained, in spite of our clearer knowledge of the disease and improvements in diagnosis and treatment. That no further decrease in the death rate has occurred, is due to the human agencies rather than to limitation of the value of antitoxin. The poor resistance of patients, their inability to manufacture a natural resistance, and the too frequent failure in early administration of sufficient antitoxin are among these causes. B. S. Roberts of the New York State Health Department found, in an analysis of over 500 deaths from diphtheria, that the death rate is practically nil when adequate treatment is given on the first day of the disease. This has been corroborated by others. The fact also remains that, when contacts are given antitoxin as an immunizing agent, the period of immunity is brief, no provision being made for susceptible contacts who are not discovered. The carrier problem is also present. Atypical and nasal diphtheria often pass unnoticed. Antitoxin is not entirely without danger, and deaths from its use, though few, have occurred. It will thus be seen that further measures are extremely necessary. Thanks to the work of Behring, Schick, and others, the dangers from additional factors can be aborted, and diphtheria so controlled that, eventually, it will become one of the diseases more rarely seen.

Lesions of diphtheria, both local and general, are due to the action of a soluble toxin secreted by the Klebs Loeffler bacillus. How they act is still a moot question. Recovery takes place through the formation of antitoxin by the body cells, which neutralizes the toxin. That permanent immunity is not produced by the disease is evident, in that two or three attacks are not very uncommon. A natural immunity is frequently present at birth and may last through life. Von Groer and Kassowitz found that those mothers who had a natural immunity were able to transmit this immunity to their offspring, while the 16 per cent of the mothers who did not possess this immunity had offspring who were not immune. These findings were more recently corroborated by Ruh and McClelland. This immunity, however, is lost in fully 85 per cent of the infants by the age of six months. Those losing this immunity reacquire it in a progressively increasing number as they grow older, but, as a rule, it is not reacquired before the ninth year, thus leaving them vulnerable during the most susceptible age group between six months and nine years.

The problem then remains to separate the immune from the susceptible and to immunize the non-immune. In 1913, Bela Schick proposed a very simple method of separating these groups based upon the observations of von Behring. Schick discovered that when 1/50 of an M. L. D. for guinea pigs weighing 250 grams was injected, intracutaneously, in a human being in whom there was 1/30 or more of antitoxin per cubic centimeter of serum, no reaction followed. If less than this amount, or none at all was present, it produced an inflammatory reaction at the site of the injection. This inflamed area persists for four days or more, and should not be confused with a somewhat similar reaction which may be produced by the protein found in the diluent, and which disappears within twenty-four or thirty-six hours. Von Behring, following the method used by Park and others in immunizing animals, showed that the same procedure could be safely used in humans. In 1920, Bieber published a history of 1097 children who had been immunized by Hahn and Sumner, in the village of Madgeburg in 1913, showing that of those who had received full treatment of toxin-antitoxin, only 3.3 per cent later developed diphtheria, while of those who had not been immunized, 15 per cent developed the disease, thus reducing the incidence by approximately 80 per cent.

From that time on, there has been an increasing

volume of reports corroborating these results. The first work on a large scale was done by Park, Zingher, and co-workers of the New York Health Department. This placed the work on a solid foundation, and served as an impetus to other communities throughout the country. As a result, most of the larger cities have undertaken this work as a routine measure, most of them working through the public schools and health boards. Consequently, there has been reported a distinct lowering of the incidence of diphtheria in those communities.

The toxin-antitoxin is prepared according to the method worked out by the New York City Laboratory, and is supplied by several of the reputable commercial houses in convenient containers for immediate use. This preparation contains 1/10 M. L. D. of toxin to the dose, and is sufficient to immunize without causing any untoward reactions, in contradistinction to the preparation used until the first of the year, which contained 3 M. L. D. The toxin-antitoxin is injected preferably intramuscularly in three doses of 1 cubic centimeter each, at weekly intervals.

It would seem that the following facts have been proved:

The use of antitoxin has about reached the limit of efficiency in reducing mortality.

The highest percentage of susceptibles are among children between the ages of 6 months and 9 years.

The Schick test is a reliable method of separating the immune from the susceptible.

Toxin-antitoxin given in three doses at intervals of one week will actively immunize about 85 per cent of the susceptibles.

This problem is, in my opinion, a health board problem, and in many of the larger communities it has been taken up by public health department with very encouraging results. In Southern California, we are laboring under a serious, difficult condition because of the great political strength of the anti-medical groups. We are completely shut out of the public schools in this work, and are, therefore, unable to reach the public through that channel. The board of health is also hampered by a paucity of nurses and physicians, and an inability to secure sufficient funds.

In Los Angeles, diphtheria immunization has been carried on since 1919 in some of the orphanages and other child-caring institutions. Where it has been adequately supervised, diphtheria has been almost entirely eradicated, but in those institutions where this work has not been done, they still have their customary yearly quarantines from diphtheria. Conditions in the county outside of the city of Los Angeles are much better in this respect, because of better organization and contacts with other communities and schools. It has been possible to reach a much larger number of children, and to date over 3000 children have been immunized.

In November, 1923, this work was begun at the Anita Baldwin Clinic. This was the first attempt in this city to reach the children outside of institutions. Later the city health department offered to supply free toxin-antitoxin. At the onset of the work a few of the children and nurses were "Schicked," with results corresponding to those published by other writers, namely, that over 80 per cent of positive reactions were obtained in the younger children, whereas only 9 per cent of the nurses were Schick positive. Since this first series, we have not given any initial Schick tests in the children under 9 years of age. This method is also being followed in many other communities. However, we are "Schicking" all of them three months after the last injection of toxin-antitoxin. Thus we are able to simplify the procedure and require fewer visits to the clinic. We have had very good response from the mothers bringing their children to the clinic, and very few have refused to have their children immunized when the procedure was explained to them. To date we have given 432 injections of toxin-antitoxin, and 91 Schick tests. This number is too small to be of any statistical value. We hope to be able to publish a detailed account of our work at a later date. This work is being done without publicity or other outside aid in interesting the parents.

More recently, a plan has been devised which may be productive of good results. A life insurance company has agreed to co-operate, and will instruct their nurses to work with the city health nurses in canvassing the homes in two districts which will be definitely outlined. The children in these districts are to be referred to the Anita Baldwin Clinic and the Children's Hospital. While much good may be accomplished by such a campaign, it will require the active co-operation of the physician to be of maximum benefit. This applies particularly to the general practitioner, who sees the bulk of the children.

It must be recognized that, as physicians, we have a moral obligation to the public; that while we are in the favored position of being better informed on health matters, it is our duty to impart that knowledge to those who are less adequately informed. This movement is one of the many, which, from time to time, we will be obliged to carry forward, and it is by such steps we will still further add to the confidence of the public at large, so valuable to the cause we lead and espouse, and in physicians who serve that cause.

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DISCUSSION

WILLIAM C. HASSLER, M. D. (Department of Public Health, San Francisco)—Perhaps once in each generation of human existence is a discovery in medicine made that equals the importance to the human race of that of toxin-antitoxin as a prophylactic and preventive of diphtheria.

Doctor Metzner says that the death rate from diphtheria has decreased very little in the last few years, because of the failure of human agencies. Naturally, there is a twofold reason for this: First and most important in the absence of toxin-antitoxin immunization, the physician is not called or the diagnosis is not made until so much of the diphtheria toxin has combined with the tissue cell that the antitoxin is not as effective as it would be if earlier recognized and administered. Secondly, many failures in the use of the Schick test are due to improper technique, and no doubt a considerable percentage of cases are classed as "immune" that should, because of this failure to get a proper Schick reaction, receive toxin-antitoxin. When we have learned this technique, we may be able to reduce the death rate still lower.

Diphtheria, before the advent of antitoxin, was a disease that gave more or less immunity against subsequent infection, but since the antitoxin has come into general use this is not a fact, because antitoxin administered during the disease inhibits the manufacture of natural antitoxin

in the blood stream, and this antitoxin artificially administered is eliminated in a short time, leaving one almost as susceptible to infection as before. I agree with Dr. Metzner that a Schick three months after the administration of toxin-antitoxin is of more importance than a preliminary Schick, because experience has proven that, in a certain proportion of cases, three doses of toxin-antitoxin mixture was not sufficient to produce immunity, and those cases should be known and receive further treatment. We, in San Francisco, have recently had this experience in a group of school children that were Schick tested, received toxin-antitoxin, and out of one class five cases developed diphtheria. No great effort has been made in San Francisco to force the Schick test, but we are spreading propoganda by circular and by discussions of the subject through our school-nursing division and health centers. We find that an increasing number of parents are inquiring and ask for this protection to their children.

LANGLEY PORTER, M. D. (380 Post Street, San Francisco)—The contribution of Dr. Metzner on diphtheria immunization is most timely, and it will be of value if the profession in California will accept the big message, which is that it is needful and useful for all health agencies—state and local—ceaselessly to inform the public that diphtheria is a preventable disease. Imperative as it is for these agencies to provide the machinery by which any child in the community, whose parents desire it, may be immunized, *it is only through the aid of the individual physician practicing in his office that the full benefit of the discoveries of Behring, Schick, Zingher and Park, can be made fully available to the community.*

Some physicians are issuing a statement of the value of the toxin-antitoxin immunization to their patients. To my mind, it would be a valuable disease preventive measure if the boards of health would supply a printed slip which could be enclosed in every bit of correspondence that leaves the doctor's offices—a slip which might ask, "Is your child protected against the deadly disease, diphtheria? If not, why not? The use of toxin-antitoxin is a proven preventive, your doctor is prepared to advise and serve you."

As to the technique, the method of the New York Board of Health is based on wide experience, and should be accepted as the standard. The reaction to the first injection can be used as Park uses it—to replace the preliminary Schick test in young patients. As Hassler emphasizes, the Schick test, following three months after the immunizing course, is most important in order to check the acquisition of immunity. *Not less important is it to instruct parents and teachers that the three months following the immunizing course is a time of susceptibility, else we will have the ignorant and vicious pointing of the finger of scorn and saying, "The toxin-antitoxin—oh, that is a fake of the doctors.* Smith's Johnnie and Jones' Katie, they got diphtheria a few days or a few weeks after they were given the serum."

CLIFFORD D. SWEET, M. D. (440 Seventeenth Street, Oakland, Calif.)—I am glad, indeed, if I can emphasize the importance of diphtheria immunization by means of toxin-antitoxin. *Only by means of continued work and this matter ever be satisfactorily presented to the public.* The mother's natural reluctance to submit her healthy *enthusiastic propaganda by all practicing physicians can* child to even a fancied inconvenience can only be overcome by her physician pointing out its advantages and its lack of any real danger. Since the 1 plus L dose has been used, we have had few, if any, severe reactions. It is very important that the mother be told of the possibility of failure to completely immunize the patient. In my experience three months is a somewhat too short time to allow immunization to become complete. We direct our patients to return in four months for the Schick test.

I hope many others will follow Doctor Metzner's example and present this matter back to the general and medical public at every opportunity.

EDGAR BRIGHAM, M. D. (Dinuba, Calif.)—The toxin-antitoxin treatment is without doubt the most important recent prophylactic measure to be used. I agree with Doctor Metzner that it is, however, essentially a health board measure, as the opportunity for carrying out the tests and checking results on a large scale, is, with few exceptions, confined to public service.

Doctor Sweet considers it best to wait four months after the toxin-antitoxin injection before making the Schick test. In view of the experience of Sears, Zingher and others, it is probable that the longer period would show more negative reactions.

As practicing physicians, our duty is to support our local boards of health as the most active agents of preventive medicine.

Metzner announces a truth which ought to be actively accepted by every member of the profession, when he says: "It must be recognized that, as physicians, we have a moral obligation to the public . . . to impart knowledge to those who are less adequately informed."

J. W. MORGAN, M. D. (Modesto, Calif.)—It is to be hoped that Doctor Metzner's article will be read by every physician in the West, as it is through co-operation by the individual family medical advisors that the parents will see the light. We have had splendid results in Modesto. During the past ten months we have immunized over 1400 children. *The City Council donates the toxin-antitoxin, and the parents are advised by the health department through the press to go to their own physicians for the treatment. All members of the local medical society agree to give the treatment for a nominal sum ($3 is charged), and everyone has co-operated.*

This method does not allow for proper Schick-testing, but it gets the children immunized. We are now able to tell the public that if they have diphtheria it is due to neglect. *To date the cost to the City Council has been less than $250, and everyone is of the opinion that the physicians are taking the proper attitude.* Our greatest difficulty has been to convince the parents that children under school age are so susceptible. It is our plan to advertise every case of diphtheria reported so that the parents will finally have the great majority of their children immunized. We also stress the fact that three months' time must elapse before the immunity will be active.

J. D. DUNSHEE, M. D. (Department of Health, City of Los Angeles)—The city health department has been much handicapped in this work which might have been and should be done in Los Angeles, due to the fact that they do not have admission to the public schools. They have been Schicking all the inmates of two of the largest institutions in the city, and giving toxin-antitoxin to those showing susceptibility for the past four years, and have endeavored to do the same in other institutions, but up to a very recent time have been unable to get their consent to do this.

It is well understood among health workers that health programs are exceedingly more difficult in cities of any size than in the smaller communities, which is largely responsible for the fact that the smaller places of Los Angeles County have received this better.

We have been able to go into the outlying districts of the city and easily secure the consent of a majority of the parents in this work.

One of the greatest obstacles we have met is the general apathy of some physicians and the opposition of a few who seem to have considered, or, at any rate, advised families under their care that the administration of toxin-antitoxin is dangerous.

DOCTOR METZNER (closing)—I have very little to add to the discussions. In regard to allowing four months to elapse before giving a re-Schick, as suggested by Doctor Sweet, I can see no objection to such a procedure. I feel, however, that it is practically as reliable to re-Schick in three months, and it is easier to keep in touch with the patient for the shorter length of time. Each parent is requested to have another Schick test made in six months.

Think of the dancer, Lotta, who accumulated $4,000,000, and died at the age of 74 in Boston four months ago. She left her money, a large part of it, to PREVENT the investigation of disease through the study of diseases in animals. It isn't fair to the beasts, to the animals of the world, to allow them to go on dying when we are taking care of ourselves, but the highest work that any animal in the world can do is to furnish evidence for the protection of human life.—C. H. Mayo.

SURGICAL AMEBIASIS

By P. K. GILMAN, M. D., San Francisco

Proper drug treatment cures a large percentage (85 to 90 per cent) of cases of amebiasis with one course. A small number will require a second course. A still smaller a third.

Of the remaining small number, the majority suffer reinfection from a focus either in the appendix, gallbladder, or both. Removal of these foci is followed by permanent cure.

DISCUSSION *by Alfred C. Reed, San Francisco; Wilson T. Davidson, San Francisco.*

AMEBIASIS is not limited to tropical and subtropical countries. It is widespread in its distribution, and occurs in practically all parts of the United States. Here in California the cases of infection with A. histolytica are on the increase.

The disease—infection with A. histolytica—may manifest itself through a great variety of symptoms. One of these is dysentery, at times the predominant one. The disease should not, however, take its name from one symptom and, therefor, amebic dysentery is not a good term; in fact, is misleading, as often no dysentery occurs during the entire course of the disease.

Amebiasis is to be preferred. Its symptoms may be definite or extremely indefinite; may be concerned with the gastro-intestinal system and suggest peptic ulcer with either normal-appearing or very costive stools; may center in the neuro-muscular apparatus, with various nervous manifestations and muscular pains.

In addition to persons presenting sufficient symptoms to be classed as ill, there is a group of "carriers"—people with cysts and at times motile amebae in their stools who consider themselves as not suffering from amebiasis. Is any so-called carrier perfectly well? The majority probably are not, if sufficiently painstaking investigation be made.

While the treatment of amebiasis is medical in over 90 per cent of the cases and of these from 85 to 90 per cent are cured by one course of treatment, some cases will require a second, and a few a third course in order to cure by medical means. In addition to this major group a smaller group will resist any or all known forms of medical treatment. These cases become surgical.

The surgical cases may be fitted into three main groups:

1. Cases requiring surgery to assist medical measures directed toward clearing the bowel of the amebae, the disease being limited to the bowel.
2. Cases complicated by disease set up by the organism beyond the limits of the bowel.
3. Cases "incurable" by medical means to remove at operation organs now known to harbor the organism and act as foci of reinfection of the gut. These cases are cleared of the organism by medical means temporarily only.

In the first group, dysentery is the important symptom, either acute or chronic. The patient either shows no signs of improvement with drugs, diet, and rest, or becomes worse.

Surgery should here be considered early, and has for its object putting the diseased bowel at rest. This may be attempted by appendicostomy, by cecostomy, or by ileostomy.

Appendicostomy was introduced largely for purposes of lavage until the x-ray showed us how completely and promptly all parts of the large bowel may be reached from below via the rectum. However, appendicostomy undoubtedly has a value in certain cases.

Cecostomy is to be preferred to appendicostomy, as being followed by more complete rest of the large bowel. However, this rest is far from satisfactory, as some bowel contents will pass across the opening. Compared to ileostomy, cecostomy is more simple and possibly more readily closed, but is less effective.

Ileostomy is followed by absolute rest of the large bowel, and the relief of symptoms is immediate. With the ordinary ileostomy, a second operation, of course, is necessary to restore the continuity of the bowel. The more recent method of forming a double diaphragm, as used by Stone of Baltimore, meets this objection.

In the second group occur the abscesses, empyemata and granulomata resulting from the action of the ameba beyond the limits of the bowel wall.

Pulmonary abscess is not rare. It usually follows an abscess below the diaphragm, but at times is primary. It may rupture into and drain through a bronchus, and at times cures itself spontaneously. More often, however, added surgical drainage is needed.

Amebic abscess of the liver, if of any considerable size, is surgical and demands drainage. Hepatitis, and at times small abscesses, may yield to medical measures. We prefer the abdominal route in attacking hepatic abscess, as the surrounding structures may be explored and there is a minimum danger of peritonitis, the amebic pus usually being sterile. After drainage is established, the administration of emetin hastens materially the healing and shrinkage of the abscess cavity.

Abdominal abscesses are rare, when one considers the condition of the large bowel in a well-developed case of infection. Bacterial infection is, of course, added.

Perinephritic abscess is met with occasionally. It follows spread of material from the colon direct or indirectly from an abscess of the liver pointing downward.

Of considerable importance are amebic granulomata. These inflammatory masses occur in relation to the wall of the large bowel, usually at the flexures, and, clinically, strongly suggest new growth. We have seen two cases subjected to resection for supposed malignancy. Their treatment is medical, rarely surgical, and then only for obstruction.

Less common abscesses are those occurring in the brain and in the spleen.

The third group of cases which are surgical includes those where medical treatment has failed. The so-called "carriers" are placed in this division.

The important question is, when has the drug treatment failed? My associate, Gunn, holds the case incurable medically, if the amebae appear in the stool during a course of combined emetin and salvarsan treatment after the salvarsan has been ad-

ministered, cases not responding promptly to the drug treatment and cases where amebae reappear in the stool after three complete courses of the combined treatment, as outlined by him.

Are there any true "carriers"? Very few if any. If a careful history and examination of such persons be made, it is usually possible to elicit more or less definite symptoms due to the infeetion. These symptoms may be referred to any part of the gastro-intestinal tract or to the neuro-muscular apparatus.

In the above cases, foci of reinfection exist in association with the gastro-intestinal tract, where the amebae lodge and where the circulating drugs fail possibly to reach them in sufficient concentration to kill. Removal of these foci will lead to a cure, at times without any further medical measures.

The appendix and gall-bladder are both possible foci for reinfection of the intestine. The former has been known, for some time, to harbor amebae in its mucosa. Amebic ulceration of the appendix often produces typical symptoms of appendicitis.

Crowell, in Manila, some years ago demonstrated amebae in the wall of the gall-bladder, and we have confirmed this on several occasions. Patients long considered incurable have been cured following cholecystectomy and appendectomy.

SUMMARY

Proper drug treatment cures a large percentage (85 to 90 per cent) of cases of amebiasis with one course. A small number will require a second course. A still smaller a third.

Of the remaining small number, the majority suffer reinfection from a focus either in the appendix, gall-bladder, or both. Removal of these foci will be followed by permanent cure.

350 Post Street.

DISCUSSION

ALFRED C. REED, M. D. (380 Post Street, San Francisco)—I think this is one of the best summaries I have seen of the subject under discussion. It is comprehensive, and I can only endorse the position taken. I am constantly seeing the surprise of patients that amebic infection can be acquired in California. Yet it is frequent in persons who have not been out of the state, and even is acquired here in the bay district. As the author points out, the term "amebiasis" is much more accurate and descriptive than amebic dysentery. This term was coined by Dr. Musgrave, in Manila. It can be matched or qualified in another term which I have used to describe the prevailing type of this disease as we meet it here. This is "non-dysenteric amebiasis." In hot climates dysentery is a more usual symptom. In cooler climates and in California, it is our experience that constipation predominates as a symptom in these patients, and that many other symptoms are found. Hence, the logic of classifying such cases as non-dysenteric amebiasis. Finally, I want to emphasize the dangers of the indiscriminate and injudicious use of emetin. Emetin is a powerful and poorly understood drug. Its pharmacology is not worked out fully. A certain percentage of patients treated intensively for amebiasis will develop symptoms of weak heart, low blood pressure, and peripheral neuritis. The syndrome has certain analogies to beriberi. It is interesting that, in the Orient, the observation has been made that dysentery treatment often precipitated an attack of beriberi. We need to know more of the action of emetin and to understand better how to intensify its amebicidal effect by diet and other drugs.

WILSON T. DAVIDSON, M. D. (350 Post Street, San Francisco)—I have read with great interest Dr. Gilman's paper, and I consider it a valuable contribution to this important subject. I believe that if these cases were diagnosed early and treated intensely, very few of them would develop surgical complications.

We have passed through a period of therapeutic nihilism. Many will recall Dr. Osler's dictum that we had only four specifics. Recently Dr. Hewlitt added quite a number to that list.

Although the life history of the entamoeba histolytica has been worked out fairly completely, unfortunately we have no specific for amebiasis. Ipecac has been the favorite remedy since the time when the roots were carried from Brazil to France and sold to Louis the fourteenth as a secret remedy for a select few of his court. To the English in India must be given the credit for popularizing the use of this drug, and it was used as such until within recent years, when the alkaloid emetin was separated. For a few years emetin was very popular, almost to the exclusion of all other remedies. Lilley & Co. put out the alcresta tablets, which were very widely used.

At the present time we see large doses of bismuth, as recommended by Deeks in the Canal Zone, emetin-bismuth-iodine and emetin per iodide, as used by the English; yatrin, a combination of iodin, oxy chinolin and sodium sulphate, as used by the Germans, and various preparations of arsenic and emetin, as used by the French. Chaparro armagosa or bitter root, as a decoction, now has its strong advocates; and recently, with the prevailing tendency to cure everything by intravenous medication, arsenic preparations and the penetrating dyes are coming into vogue. We also see mercurochrome used both by mouth and by way of the colon.

Twenty-five years ago, when I first began the use of ipecac in Cuba in the treatment of amebic dysentery, I found that the symptoms rapidly subsided, and I thought that my patients were cured. However, no laboratory examinations were made and no doubt many of them were not cured, became chronic cyst excretors, and quite likely developed just such surgical complications as Dr. Gilman has described; and I would like to emphasize the point that today amebiasis patients are still discharged as cured as soon as they are free of symptoms, and one stool is pronounced negative.

Personally, I put these patients to bed on a liquid diet and give a combined course of emetin hypodermically, three grain capsules of emetin-bismuth-iodine, and at the end of the week .9 of neosalvarsan. This completes the course, and in 90 per cent of cases is effective in rendering the patient free from parasites. However, it may be necessary to repeat the course one or more times.

No patient should be dismissed until one is reasonably sure that he has been rendered free from the infection. This is by far the most important point of all and one to which particular stress has been given by Herbert Gunn.

As a working method, I usually examine the second week, after a course of treatment, a formed stool; then give the patient a dose of salts, and examine a liquid stool with ample fecal matter. Then, afterwards, another formed stool. This is repeated the following week. Then, in the course of five or six weeks, a series of stools are examined: five or six formed stools, and three or four liquid stools. This is repeated the following month.

By giving salts and examining the stools while they are warm, you get the motile forms. During the entire course, twenty-four formed stools and twelve liquid are examined. If such examinations are made with negative findings over a period of three or four months, one can feel quite confident that his patient no longer harbors infection in the colon.

Examining the Well Person—The best post-graduate course that the American medical profession could have at the present time would be to learn how to examine the well person. We should examine every case from head to foot, no matter what the complaint. If we had that sort of routine and uniformity of examination in our individual practices, what wonderful doctors we would be. What is our trouble? Lack of knowledge? No. We really don't see many obvious conditions because we don't examine systematically. What better preparation can you have for examining and diagnosing the pathologic conditions than to make it a custom among physicians to examine frequently every individual in their own clientele?—W. D. Haggard (A. M. A. Bulletin).

A SYMPTOM COMPLEX IN DIABETES THAT MAY BE CONFUSED WITH THE REACTION OF INSULIN OVERDOSAGE *

By BERTNARD SMITH, M. D., *Los Angeles*

Symptoms described.
Illustrative case record given.
Significance of the symptom complex not fully understood.

DISCUSSION *by Franklin R. Nuzum, Santa Barbara; Albert H. Rowe, Oakland; P. Berman, Los Angeles.*

A CONSIDERABLE proportion of diabetic patients develop a rather definite group of symptoms that may easily be confused with many of the symptoms that follow an excessive insulin dose. These symptoms appear most frequently in those patients who had become undernourished to an extreme degree, or who have had some complication that has required vigorous treatment with insulin. The symptoms do not usually appear until the patient has reached a state of apparently adequate nourishment and strength.

Muscle weakness is frequently one of the early symptoms. This weakness usually appears in the middle of the forenoon or late in the afternoon, and is described often as a sense of goneness or a feeling of lack of supporting strength in the leg muscles. It closely resembles the weakness that may be an early symptom from an overdose of insulin. A sensation of stiffness in the muscles may be present during the period of weakness or may be constant throughout the day. This is often felt in both arm and leg muscles. Occasionally, there have been noticed slight spasmodic contractions in these muscles that give the appearance of a mild tetany.

During the periods of weakness, the patient may complain of chilliness. At such times the forehead and palms are moist with a cold perspiration; the entire face shows an ashy pallor; the pupils are dilated; the pulse is rapid and soft; and the hands and feet are cold. When the symptoms are more pronounced the patient may appear to be in severe shock or collapse. The pallor is more marked than in the early symptoms of the insulin reaction, and the cold sweating is more profuse than the slight moisture that precedes the insulin tremor, but is not so general or so extreme as the later sweating associated with the insulin convulsion. Dizziness is a common symptom and may be so severe that the patient is unable to continue at work. There may be various parathesias, and disturbance of co-ordination, together with a dimness of vision. Faintness may be a disturbing symptom, although an actual loss of consciousness has never been reported by the patients. Arterial hypotension has been a constant finding, even when the symptoms have been mild. More recently a gradual lowering of the blood pressure has been found in patients before definite symptoms developed.

These symptoms may be found with patients who have never received insulin. They occur more frequently among patients who have had the aid of the extract. The condition seems to be most common among those patients who have been built up rapidly to a satisfactory weight, or who have been carried through a short convalescence after some serious diabetic complication. The insulin reaction is always a result of subnormal blood sugar, and the symptoms will vary in severity with the degree of hypoglycemia present. The condition now described may be associated with a normal blood sugar value or with a hyperglycemia. Glycosuria is not uncommon in the period these symptoms remain uncontrolled. Several patients have been kept under observation for several weeks, during which time the sugar excretion has continued at a concentration of from 1 to 5 per cent. This glycosuria is not associated with an increased urine volume or any other of the common diabetic symptoms. An increase in the insulin dosage to clear up this glycosuria may result in a severe reaction from overdosage, with little, if any, effect on the sugar output.

Studies of this condition have not been carried far enough at this time to justify any conclusions as to a definite etiology. Estimations of the calcium [1] and inorganic phosphorus of the blood have been of interest. In twenty-five determinations on twenty diabetic patients who were in good physical condition and without symptoms, calcium values below 10 mgs. per 100 cc. of blood were found in but two patients, and both of these had had symptoms, but at the time the determinations were made they were vigorous and doing manual work. The average calcium value for this normal series was 11.45 mgs. In twenty-nine determinations on twenty-three patients who had symptoms, only seven gave values above 10.0 mgs. The average for this group was 9.01 mgs., with 6.4 mgs. as the extreme low value. Determinations of inorganic phosphorus showed practically the same distribution for the two series, averaging 3.54 mgs. and 3.57 mgs., respectively.

ILLUSTRATIVE CASE REPORT—June 24, 1923. Admitted. Male. Age, 54 years. Weight, 56 kgm. Gangrene of foot. General examination negative, except for gangrene. Blood pressure, 128/80. Urinalysis: Sugar, 1.9 per cent. Diacetic acid trace. Albumen trace. Casts none. Blood analysis: Sugar, 400 mgs. Calcium, 11.2 mgs. Non-protein nitrogen, 2.6 mgs. Diet: C. 60; P. 50; F. 140. Insulin: Ten units twice a day.

AUGUST 30, 1923—Insulin stopped. Diet: C. 90; P. 60; F. 150. Feeling well. Active. Returns to work.

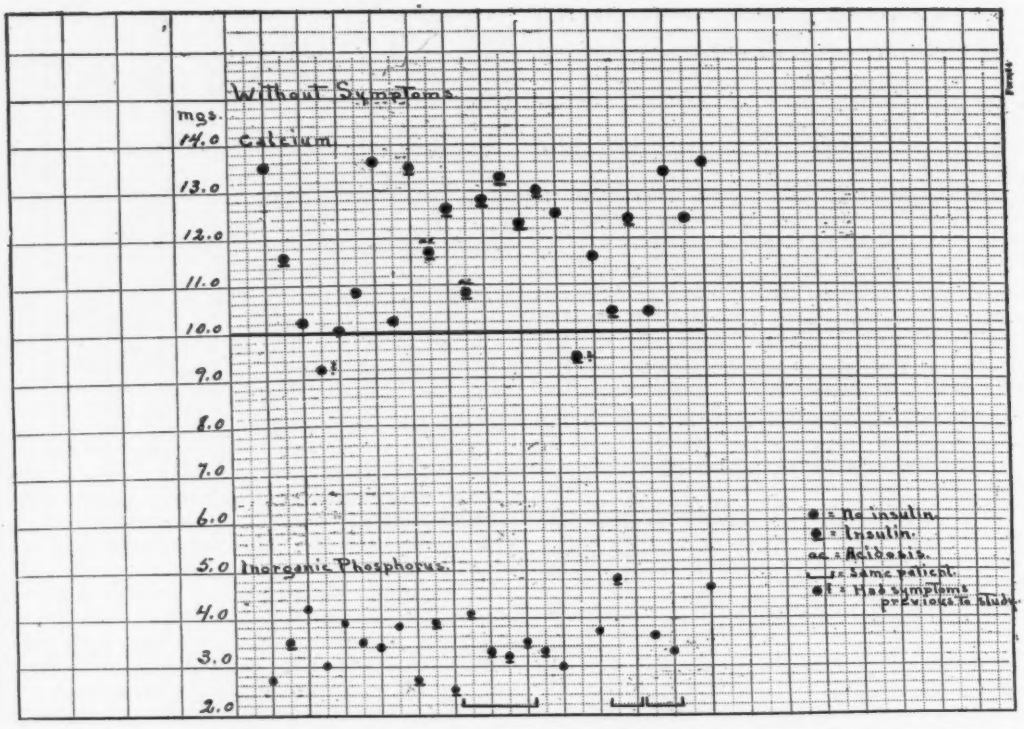
SEPTEMBER 30, 1923—Complains of extreme weakness of leg muscles. Weakness appears about 10 a. m. and 5 p. m. Urinalysis: Sugar, 1.08 per cent. Albumen none. Diacetic acid none. Blood analysis: Sugar, 175 mgs.

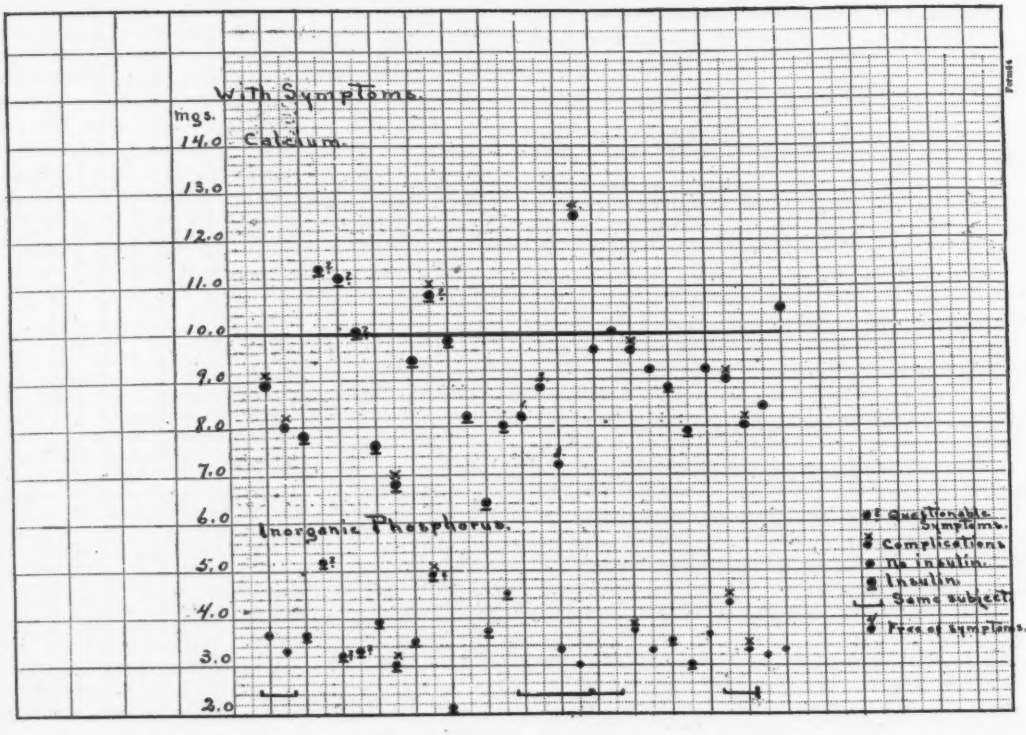
DECEMBER 10, 1923—Symptoms have increased. Complains of inco-ordination, aching and stiffness of leg muscles. Dimness of vision and faintness. Attacks periodic. Feels well between attacks. Blood pressure, 110/78. Urinalysis: Sugar, 0.75 per cent. No acidosis. No albumen. Blood analysis: Sugar, 138 mgs. Calcium, 8.2 mgs.

FEBRUARY 4, 1924—Seen during symptoms. Face of ashy pallor. Hands and feet cold. Forehead and palms moist with cold sweat. Pupils dilated. Pulse regular, 110. Blood pressure, 90/68. General appearance of shock. States that symptoms are often severe during night. Is afraid to continue at work or to go on street alone because of faintness and dizziness. Urinalysis: Sugar, 0.28 per cent. No albumen. No acidosis. Blood analysis:

* From the Los Angeles Metabolic Clinic. Preliminary Report.

[1] Calcium determinations were made by the technique of Kramer and Tisdall, Jour. Biol. Chem. 1921, XLVII, 475. Determinations of inorganic phosphorus were made by the method of Tisdall, Jour. Biol. Chem. 1922, L. 329.


Without Symptoms.
mgs.
14.0
Calcium.
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
Inorganic Phosphorus.
4.0
3.0
2.0
= No insulin.
= Insulin.
ac. = Acidosis.
= Same patient.
= Had symptoms previous to study.


With Symptoms.
mgs.
14.0
Calcium.
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
Inorganic Phosphorus.
5.0
4.0
3.0
2.0
= Questionable Symptoms.
= Complications
= No insulin.
= Insulin.
= Same subject
= Free of symptoms.

Sugar, 138 mgs. Calcium, 7.2 mgs. Inorganic phosphorus, 3.33 mgs.

APRIL 13, 1924—Has been away from work for one month. Feels well. No symptoms for two weeks. Blood calcium, 12.6 mgs. Blood pressure, 136/80.

MAY 10, 1924—Patient has continued at work without symptoms.

1032 West Eighteenth Street.

DISCUSSION

F. R. NUZUM, M. D. (Santa Barbara Cottage Hospital, Santa Barbara)—Doctor Smith's report of a symptom complex in diabetes that might easily be confused with symptoms caused by insulin overdosage is a matter of great importance to those treating diabetic patients. He has shown that there is a difference in the symptomatology of the two conditions, and that laboratory studies will determine at once whether insulin overdosage is actually the cause of the condition. His studies having to do with calcium and inorganic phosphorus of the blood are interesting and suggestive. Further work will be necessary to determine what these findings signify.

A considerable number of diabetic patients with whom we have had to do have had complaints which are covered by the term "neuritis." Any or all of the extremities have been involved in many of these patients. As improvement occurs coincident with the use of insulin, a large per cent of them have become free of these "neuritic" pains. Some extremely emaciated patients, when gaining weight rapidly with the help of insulin, have complained of pains in the joints of the lower extremities upon first arising in the morning. This complaint is not to be confused with the "neuritis" complained of as noted above.

ALBERT H. ROWE, M. D. (242 Moss Avenue, Oakland, Calif.)—The syndrome which Smith reports has been noticed in a few of the patients I have under treatment with insulin, though any urgency in regard to such symptoms has not impressed me. I have carried out calcium determinations on some forty diabetics during the last year with the titration method of Clarke of the University of California. During the same time, in order to be sure of the normal variations obtained by this method, we have determined the calcium content of the blood plasma in fifty normals, most of whom were first and second year medical students. The results obtained in this normal series vary between about 8 milligrams and 12 milligrams per 100 cc. of blood plasma, and the diabetic values have fallen within the same range, excepting in several cases of coma where with much dehydration the calcium was around 13 or 14 milligrams. I am continuing the calcium studies, and it will be with added interest that I shall watch for the syndrome which Smith describes and seek to corroborate his findings in regard to the calcium values in the blood plasma of such patients.

P. BERMAN, M. D. (Los Angeles General Hospital, Los Angeles)—I have on several occasions observed a train of symptoms similar to those described by Smith, especially in patients taking large doses of insulin. The blood sugar examined at the time of the reaction does not show the expected hypoglycemia. This was especially noticed in some patients recovering from deep coma after very large doses of insulin were given. Pain in the extremities was a most usual symptom in my patients. The cause of this condition in several patients was considered to be due to the too rapid reduction in the blood sugar, though the level of the sugar in the blood still remained above normal.

The relation of this symptom complex to the calcium condition of the blood is certainly of great interest.

Do You Know Him?—A man who is now a prominent practicing physician was speaking of an old doctor who has just died. "I remember," he said, "when I was an interne, coming in late one night to the hospital and I saw this doctor sitting on the steps. 'What is the matter?' I asked him. 'Well, that woman we operated today,' he said, 'I went home and went to bed, but I kept thinking about her and I couldn't sleep, so I got up and dressed and came over. I thought it was better to be around here in case any complications should come up.'"—Missouri State Medical Journal.

RINGWORM OF THE SCALP *

By HIRAM E. MILLER, M. D., San Francisco

The disease increasing.
X-ray the best treatment and the quickest cure.

DISCUSSION *by Samuel Ayres, Los Angeles; Granville MacGowan, Los Angeles; O. V. Schroeter, Los Angeles; Moses Scholtz, Los Angeles; Harry E. Alderson, San Francisco.*

THE marked increase in the number of patients that I have recently seen with ringworm of the scalp has prompted me to bring this subject before you. In the last six months, I have treated in clinic and private practice over ten times as many cases as in any previous six-month period. The cases have been diffusely scattered throughout the San Francisco bay region, and are not the result of an epidemic in a single institution or localized community. I do not know the cause of this increase, but I think that it may go hand in hand with a general increased prevalence of ringworm infections of other parts of the body.

The following chart will show this increase:

1920	1921	1922	1923	1924	Total
– | 3	3 | 6	6 | 4	3 | 19	43	87

Of the 19 cases in the last half of 1923, 18 occurred during November and December. All of the cases in 1924 have occurred during the last four months. This makes a total of 61 cases during the last six months. The largest number that I had seen in any previous six months was 6. Of these 87 cases, 19 came from private homes, and the remaining 68 from five different orphanages or institutions.

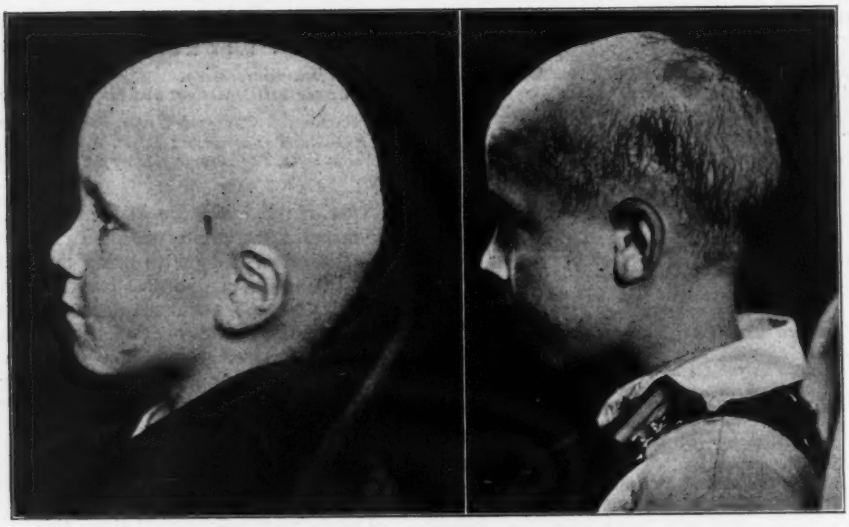
Before the advent of modern x-ray therapy, the treatment of this number of patients would have been a long and tedious process. I personally have not had any experience in treating ringworm of the scalp with local applications. At the Paris Ringworm School, prior to the time when x-ray therapy was used, it took, on an average, two years to cure their cases. This was under ideal conditions, the therapy being given by experienced attendants. Darier states that it takes an average of eighteen months to produce a cure, with a few taking from two to four years.

A few of my cases were well and back in school in a month. On an average, they were away from school for seven and one-half weeks, the longest period being three and one-fourth months. The hair had not returned in this time, but the child was cured of the ringworm infection.

I do not wish to advocate x-ray therapy for all cases of ringworm of the scalp, nor do I wish to deny the fact that isolated cases may be cured by local applications in a comparatively short time. Broadly speaking, however, I do think that x-ray therapy is the method of choice and the only type of therapy to be carried on in institutions on account of the danger of infection to others.

Ringworm of the scalp clears spontaneously at puberty, probably due to some inhibitory action of the glands of internal secretion on the growth of the organism in the hair shafts. Children who are 12 to 13 years of age may, therefore, be treated with local applications, knowing that they will clear

*From the Department of Dermatology, University of California Medical School.



No. 1—Complete defluvium due to x-ray therapy. Ringworm infection is cured and hair is returning. Photograph taken one month after treatment.

No. 2—Partial defluvium due to x-ray therapy. Hair has all fallen from ringworm areas. Disease cured and new hair coming in. Six weeks after treatment.

within a few months, due to internal changes. In an infant of six and one-half months, I was able to clear up the disease in a few weeks with local applications. In a child under 3 years of age it may be difficult to give x-ray therapy, as the little patient will be unable to stay quiet for a sufficient period of time. All patients between the ages of 3 and 12 can generally be treated with x-ray therapy without difficulty. I have had some children of 3 years of age that were much easier to treat than others of 8 or 10. Institutional children in general are ideal patients, while those from private homes are often spoiled and unruly.

It is needless to say that a positive diagnosis must be made before the patient is submitted to x-ray therapy. The main difficulty that one encounters is in differentiating the disease from alopecia areata. The bran-like scales, the stumps of hairs, and the localized areas of alopecia in a young subject are always more than suggestive. Microscopical examination of the stumps of hairs should always be done to make a positive diagnosis. The diagnosis should be made as soon as possible to prevent the possibility of infecting others.

When there is only one visible lesion, one may be tempted to epilate this area alone. In general, I think this is always unsatisfactory. When the clippers are run over the scalp, many smaller areas are found that could not be seen before the hair was clipped. If one area is to be treated, make that exposure correspond to one of the five Kienböck-Adamson areas, so if further treatment is necessary the other four areas may be used. I had one case referred to me on which the localized areas only had been treated, and many of the early areas were reinfected before the later ones were healed and a sufficient period of time had not elapsed to allow further x-ray treatment.

In 1897, two years after the discovery of x-rays, Freund suggested the use of x-ray in treating localized areas of ringworm of the scalp. Due to inaccurate instruments, many cases of permanent alopecia resulted. In 1904 Sabouraud and Noiré introduced the plan of epilating the entire scalp at one sitting. In 1907 and 1909 Kienböck and Adamson, respectively, elaborated our present method of treating five areas. The advent of the Coolidge tube in 1914, the development of the interrupterless transformer by Snook in 1908, and the arithmetical method of computing dosage as advanced by MacKee, Remer, and Witherbee, have made x-ray treatment of ringworm of the scalp a safe procedure.

X-ray treatment for ringworm of the scalp is solely a mechanical process. The spores and mycelia are unaffected by the roentgen ray. The ray causes the hair shaft to fall from the hair follicle in from fifteen to twenty-one days after exposure. It thus removes the millions of spores and all of the hair in which they may live.

The local treatment that has been recently applied to the scalp may be a contra-indication to immediate radiation. If mercury, iodine, sulphur, chrysarobin, etc., has been applied in any form, a period of a week or ten days should be allowed to elapse before x-ray treatment is given.

The hair should be cut close to the scalp, to enable one to make careful measurements and to prevent it from acting as a filter.

I do not wish to go into the technique of x-ray treatment of ringworm of the scalp in detail. Anyone who endeavors to do this type of work should acquaint themselves with every detail as brought out in MacKee's text-book on "X-ray and Radium Treatment of Diseases of the Skin." The scalp is marked off into five areas, according to the Kienböck-Adamson method. One Holzknecht unit of unfiltered x-ray therapy at skin distance is given over each of these five areas at one sitting. The whole procedure is carried out in a period of twenty to thirty minutes. The hair falls out within two to

three weeks after treatment. With this technique, all of the hair may not fall. In general, the diseased hair falls first, and even with a partial defluvium the result will be satisfactory. The hair begins to return almost immediately, and the patient will have a good growth of hair in three or four months. The margin of safety is likely such that one may give 25 per cent more than this amount without disastrous results, but this should not be encroached upon.

Of the eighty-seven cases that I have treated with x-ray therapy, I have not had a single case with any permanent alopecia. Everyone should have the same results if they follow the technique carefully. In the first two patients that I treated, the hair did not fall at all. They were the first cases with ringworm of the scalp that I had treated with this machine, and they did not receive sufficient x-ray to cause a defluvium. They had to be retreated.

The after treatment of most of these cases is very simple. The children are provided with cloth caps, to be worn under the regular head covering. They have to be changed daily or bi-weekly, and boiled before reusing. These are discarded as soon as the hair has fallen. At the end of the second week I prescribe a 3 per cent ammoniate of mercury ointment to be massaged into the scalp, with the idea of preventing reinfection.

A week or ten days after the x-ray has been applied the areas may become inflamed. In certain cases (10 per cent) mild as well as severe toxic symptoms may develop along with a more or less severe impetiginized dermatitis of the entire scalp. Under the continued use of a 3 per cent ammoniate of mercury ointment, perhaps supplemented by boric acid compresses, the areas clear up in from ten days to two weeks' time, not however, without considerable worry and concern on the part of the parents of the child.

Without thorough study one cannot appreciate the economic and social aspects of the disease. Under modern x-ray therapy each patient generally remains out of school from six to nine weeks, and may have been the cause of several others remaining away for similar periods of time. If the disease is left untreated or treated with local applications alone, the child may be forced to remain out of school until the disease heals spontaneously at the age of puberty. He is then so backward that he may prefer to go to work rather than to school.

In conclusion, I wish to call your attention to the marked increase in the prevalence of ringworm of the scalp, to roentgen-ray therapy as the best and quickest way to a permanent cure and to the comparative safety of this procedure if all details of technique are carefully carried out.

Fitzhugh Building.

DISCUSSION

SAMUEL AYRES, JR., M. D. (Brockman Building, Los Angeles)—I thoroughly agree with Dr. Miller regarding the efficacy of x-ray in the treatment of ringworm of the scalp; its rapid and satisfactory results have been amply demonstrated. In the hands of such a capable operator as Miller it is reasonably safe. But I do contend that conservative measures are preferable in the average case.

The element of risk in roentgenotherapy cannot be entirely removed, and I do not feel that any element of risk whatsoever should enter into the treatment of a benign condition when absolutely safe measures can be applied with success. In treating carcinoma or some serious disorder which threatens life, a reasonable element of risk is justifiable. A personal experience of my own in which I was very nearly responsible for producing a permanent alopecia has given me a wholesome respect for the possible dangers of roentgenotherapy. I am not nearly so pessimistic concerning the treatment of scalp ringworm by local applications. I thoroughly agree and insist that epilation shall be the first step in treatment, but with a little care and patience this can be accomplished in a most thorough manner by means of epilating forceps or in more extensive areas by the application and rapid removal of sheets of adhesive plaster after the hair has been cut close. The infected hairs readily adhere to the adhesive. Rigid cleanliness to avoid reinfection must be observed. A variety of local applications has been successful in my hands, especially sulphur and salicylic ointment. The treatment must be kept up from four to six weeks or longer, and epilation must be repeated every few days as needed. Thorough application of the medicament is necessary; it should be rubbed into the entire scalp for at least fifteen minutes every night and morning. Since many of our cases are seen at the Parent-Teachers' clinic and are under the careful supervision of school nurses, we feel that our cures are permanent in a high percentage of cases, and that they can be effected within a month or two. The large spore type of ringworm is often overlooked because it does not present the typical bald areas. School nurses especially should be taught to recognize these less typical cases which are often confused with seborrhea.

Although I have no available figures to offer, I have not been aware of any increase in the incidence of tinea capitis in Los Angeles.

GRANVILLE MACGOWAN, M. D. (Brack Shops Building, Los Angeles)—Dr. Miller has given to us a very interesting exposition of the most modern and rapidly successful method of treatment for ringworm of the scalp. No fault can be found with his statistics; nor are his claims unreasonable. It is alluring enough when we consider that we have at our command an agent that is clean, painless, and requires but one application to effect a cure of this loathesome disease within a very few weeks.

And yet I think I can easily see that its popularity will probably not be great, for unfortunately no one can say more than this skillful roentgeologist where he speaks of the "comparative safety of this procedure if all details of technique are carefully carried out."

There is always a chance that an undefendable suit for damages may be just back of its use, for an occasional destruction of the hair follicles and permanent baldness may result.

In private practice, given the proper attention by means of local remedies, the outlook for the care of ringworn of the scalp is only in the exceptional cases, the bête noir it is pictured in the books. It usually can be overcome in a reasonable time by skill applied with care.

Who of us would look with equanimity upon the unpleasant sight of a girlchild of our own made permanently bald so that she might be rid of a disease that, at the most, is only a nuisance.

O. V. SCHROETER, M. D. (Union Bank Building, Los Angeles)—Until such a time in dermatological practice as x-ray exposure to human tissues can be so precisely measured as to obviate all harmful results in all instances of average practice—and it is doubtful if such a time can ever come—especially in view of varying susceptibility as well as other factors, this form of treatment should not be the one of election. And such is the case in the treatment of ringworm of the scalp; the usual methods of treatment get results in even less time, in most cases, than it takes to recover from the x-ray alopecia when that is not permanent.

In fact, as with ringworm of the scalp, many cutaneous diseases, too many, are treated roentgenologically that should not be or could be treated with as good or better results by other methods. My experience is that the use of x-ray should be more restricted in the treatment of skin conditions. When one sees inflammatory skin conditions treated even by dermatologists in this way, it brings the thought that the x-ray is used many times because it is

handy, and the apparatus cost something, and not because the case was selected.

This is no criticism of the skillful epilation as done by Dr. Miller and others before him. The method should not be used generally.

MOSES SCHOLTZ, M. D. (Brockman Building, Los Angeles)—The advocacy of x-ray treatment as the method of choice in ringworm of the scalp can be accepted only with certain reservations. Theoretically, it must be granted that, in the hands of a competent operator, x-ray is the most effective, clean, quick, and reasonably safe method of treating ringworm of the scalp. However, I fear that, should we broadcast this notion and encourage the average regular and irregular practitioner to attempt this short cut to the cure of ringworm cases, disastrous results would follow. We see already entirely too many x-ray acute and chronic burns following the treatment of perfectly benign dermatologic conditions, such as psoriasis, eczemas, warts, etc. Epilation of the hair by x-ray is one of the most delicate technical problems in practical x-ray work, and should be entrusted only to men handling large numbers of these cases, spcializing in this line of work. Leaving aside the question of idiosyncrasy, which is doubted by most roentgenologists, the milder degree of it—individual hypersensitiveness—cannot be denied; neither the possibility of a delayed x-ray reaction can be gainsaid.

I agree with the previous speaker that, in a benign condition, such as ringworm of the scalp, which in many cases responds to local medication, would be ill-advised to use as a routine measure a weapon potential of dangerous effects as x-ray. In my opinion, every case of ringworm of the scalp should be given a trial of thorough local medication for a reasonable period of time, say from four to six weeks. Only persistent, intractible cases, those generalized all over the scalp, also cases lacking facilities of proper nursing (which is the most important factor in the treatment of ringworm), and particularly institutional cases, should be referred for x-ray treatment. With this reservation of using x-ray only in certain types of cases as means of the last resort, and not as the method of choice, I fully endorse the advocacy of x-ray treatment in ringworm of the scalp.

HARRY E. ALDERSON, M. D. (240 Stockton Street, San Francisco)—I have read Miller's paper with much interest, for I know something about his good work.

Roentgen-ray treatment of this condition, according to MacKee's technique, is cleanly and effective. In the hands of a careful man like Miller it is safe, and the results are good. There are other effective methods, but they are useless unless the patient and family co-operate fully. Where x-ray treatment is not feasible, I use a prescription given me by Jackson some years ago, containing iodine crystals in goose grease, with which you are all familiar. I have found it satisfactory. Lately, I have been using also a penetrating cleansing lotion of iodine and carbon tetrachloride. The patient must carry out the treatment intelligently and faithfully.

We are seeing a great many cases of ringworm at the Stanford Skin Clinic (and they come from all over the city), but we have not noticed any very marked increase in their number. It seems to me that Miller's rate of increase may be due to the rapid growth of his practice rather than to other causes. There are some children's institutions that seem to be regular incubators for this sort of thing. We can trace many of our ringworm, impetigo, and scabies cases in children to those places. We can keep on treating these cases successfully, but until the foci that exist here and there are cleaned up, we shall continue having many new cases.

DOCTOR MILLER (closing)—In general, the discussion of this paper has brought out the facts that I wished to emphasize. X-ray therapy of ringworm of the scalp should not be attempted by those who are not thoroughly familiar with its use, especially in the treatment of this disease. I purposely omitted the details of technique, to prevent anyone from attempting to treat the disease with only the data from this brief paper.

I wish to take exception to the statements that most cases of ringworm of the scalp can be cured by local applications in a month or two, and that the disease at the most is only a nuisance. I do not believe that the authority that I quote as to the average duration of the disease can be questioned. Darier's statistics of thousands of cases that were put into an institution and kept there until well show that it takes an average of eighteen months to produce a cure without x-ray therapy. They were treated by expert attendants. Some were well in a month or two, others took three or four years, the average being eighteen months. I know very well that some cases can be cured in a very few months without x-ray therapy. In private or clinic practice we follow those that clear up quickly, while those of long duration are apt to consult others, in the hopes of a more rapid cure. If a child is forced to remain away from school for six to eighteen months or longer, and if he has given the disease to others who had to lose their schooling for a similar period of time, I think that the disease is not a nuisance, but a calamity.

If a child with ringworm of the scalp can be given constant and intelligent nursing and kept isolated from other children, that child may be treated successfully and rather quickly cured without x-ray therapy. Unfortunately, most of the cases occur among the people in poor circumstances and large families or in institutions. These patients, I believe, should have modern x-ray therapy, in which minute care is given to all details of technique.

THE SURGICAL TREATMENT OF THE OBSTRUCTING PROSTATE *

By FLOYD F. HATCH, M. D., *Salt Lake City, Utah*
(From the Inter-Mountain Clinic, Salt Lake)

Analysis of twenty-eight cases.
Study of recent literature.

DISCUSSION *by Mark Brown, Ogden, Utah; W. G. Schulte, Salt Lake City; James R. Dillon, San Francisco.*

THE radical surgical procedures that we employ in prostatic obstruction must more than counterbalance in percentage of safety the dangers of chronic bladder residual with infection and mechanical obstruction to the outflow from the kidneys, resulting in their gradual destruction. In simple language the probability of "cure" must not be worse than the disease.

To appreciate exactly what we are offering to the public and justify ourselves in proceeding with certain types of surgery or medicine, we should periodically classify and study our treatment and results and then act on the basis of our own statistics, and not upon those of famed contemporaries. It was with this idea in mind that I have prepared an analysis of my last twenty-eight cases of prostatic obstruction that have had radical surgical treatment.

The pathology and mechanism of prostatic hypertrophy, according to some authorities, is that the prostate proper atrophies in advanced life, while the submucous glands undergo hypertrophy. These proliferating peri-urethral glands spread in various directions and thereby intrude upon the prostatic gland, which, in consequence, undergoes further atrophy. The prostate itself often appears as a pseudo-capsule, about half a centimeter thick, which the microscope will identify as prostatic tissue. The correct term should be nodular hyperplasia of the peri-urethral glands which are located between the verumontanum and internal sphincter. Predominance of adenomatous or fibromyomatous features are of no real importance, as there is no pure formation of either type. The so-called adenomatous type is observed in about 90 per cent of the cases, while the hard sclerosed nodules or fibrosis, constituting 10 per cent, are secondary to inflammation of the

* Read before the Salt Lake County Medical Society, April, 1924.

prostatic tissue. The hyperplastic process cannot be considered a pathologic process. It is no more a disease than gray hair. The expansion of the proliferating glands encounters several mechanical hindrances. Toward the perineum the diaphragma-urogenitale (triangular ligament) presents an insurmountable barrier. At the posterior surface the prostate is quite an important obstacle, more pronounced in some cases than others; the only direction of little resistance is towards the bladder. This direction is along the prostatic urethra, which, in order to keep pace with the proliferating glands, undergoes numerous changes in regard to size, lumen and curve. The glandular undergrowth, as will be seen, shows a tendency to elevate the floor of the bladder, either in toto or in segments, associated with the upward dislocation of the internal sphincter. The internal urethra undergoes stretching often from one to four centimeters and takes on distortion of normal curve and narrowing of the transverse diameter. Urethral muscles become distorted and lose power and tone to aid in sphincteric control.

As there are many cases of mild obstruction not necessitating other than temporizing methods, I will outline briefly what in my mind constitutes the necessity for prostatectomy. A clear indication is afforded when there are urgent signs pointing to interference with function of vital organs. Oddly enough, the most urgent indications often do not direct our attention to the bladder, as in "cachexia urinaria." These patients may complain only of loss of appetite, nausea, vomiting, and loss of weight. I consider the smallest residual indicating operation to be a few ounces if the urine is clear, and only a small definite residual if the urine is infected. Acute retention, in my experience, is not as grave an indication for operation as chronic retention. Bleeding is an indication for operation if profuse or if the bladder fills with clots or when less profuse or continuous if the blood loss weakens the patient. These indications are all relative and must be applied to suit the individual case. A good surgeon with low mortality may operate with less urgent indications than a surgeon with limited experience in these cases. Subjective symptoms referred to the bladder, as frequent, painful and difficult urination, are less urgent indications for operation than cases with renal embarrassment. Cases should be subjected to surgery when they interfere with activity or comfort to any great extent.

Prostatic obstruction to outflow of urine from the bladder, whether from median bar formation, contracted vesical neck, middle lobe hypertrophy or generalized enlargement from hyperplasia of periurethral glands within the prostate, constitutes pathology.

Clinically, prostatic obstruction must be differentiated from stricture, diverticulum and intra-prostatic polyp. Any of these cases may cause difficulty in diagnosis, which is easily settled by the cystoscope and cystogram.

The preliminary care of cases selected for operation consists, in the main, of rest, bladder drainage, building up of kidney function and general body resistance, as determined by renal function and blood chemistry tests and general clinical study. I am convinced that many cases with only a trace of p. s. p. and a high blood urea test can, by persistent drainage and clinical treatment, be made fair operative risks, as I have found evidenced in my cases. Hugh H. Young, in a recent paper, reported results in ten cases of continuous catheter drainage in cases of low p. s. p. and high blood urea tests, raising p. s. p. from a trace to 60 per cent in some cases and lowering the blood urea test from 140 to 26. The longest interval of preliminary drainage in his series of cases was ninety-eight days, the shortest twenty-nine days.

I select the operation to suit the individual case, as the punch operation in cases without prostatic enlargement, but with true obstruction about the internal vesical orifice as diagnosed by cystoscope, as this is a relatively simple procedure. It gives perfect results in properly selected cases and eliminates the great hazard, pain and persecution of an unnecessary major operation. Most cases of the so-called small fibrous prostate should be treated by this type of operation, as most of the pathology centers about the vesical neck and the trauma of enucleation is out of proportion to the benefit derived. In these cases the floor of the bladder is smooth or concave downward rather than elevated with a resilient glandular tumor. If the case has not been previously cystoscoped, the surgeon who finds this condition before him does well to appreciate the situation and circumvent possible disaster by removing a generous notch of the contracted fibrous vesical orifice posteriorly, assuring himself of patency below by the passage of a sound. It may be repeated that this type of case could have more suitably been operated by the punch method if proper preliminary cystoscopic diagnosis had been made.

Prostatic obstruction includes carcinoma of the prostate, and though many early cases subside sufficiently with different methods of radium applications to the prostate, if the obstruction persists and the patient's condition justifies, a partial prostatectomy is appropriate to eliminate the obstructive factor, and then radiation should be continued vigorously often with exceedingly satisfactory results. Treatment in all cases of carcinoma of the prostate is coming to be more radical with early partial perineal prostatectomy and large amounts of radiation, sufficient to cause considerable slough, where the patient's general condition justifies.

In hyperplastic obstructions, I propose to remove the nodular hyperplasia in the manner least likely to jeopardize the life of the patient and to secure the best possible functional results with the smallest number of complications. In an early case with a clear urine and good renal function and normal blood urea test, I feel than an immediate one-stage operation is appropriate. If there are factors indicating prolonged obstruction with injury to the renal mechanism, I drain with an inlying soft rubber catheter, about No. 16 F. with two or three eyes near the tip, if tolerated well, until renal and blood tests appear sufficiently near normal or as near as it appears they will approach, and then do a one-stage supra-pubic operation.

One of the most valid arguments against routine preliminary cystostomy (realizing that much can be said for and against both of the usual preliminary

drainage procedures), is that an old man is put in a condition of enforced inactivity. Many are positively made bed-ridden, rather than being kept up and about in a high state of physical and mental tone, as is allowed by a well-tolerated inlying catheter, which is synonymous with encouraged daily out-of-door exercise and activity up to the day of operation.

By irrigating with weak meroxyl solution or by administering acriflavine by mouth, it is demonstrable that the severe reaction from foul septic urine is almost entirely avoided as a post-operative complication.

In cases of mildly infected urinary tracts, I follow the above routine in general. Some very good surgeons go so far as to state that they feel infected cases treated with careful pre-operative measures are better risks than their preliminary clean cases. They state that infection seems to produce an auto-immunization.

Where there is severe bladder or renal sepsis or bladder stones present, I feel that a two-stage suprapubic operation is often indicated, and do the first stage under novocain anesthesia and drain the wound high so there will be sufficient room above the pubis to adequately enlarge the drainage wound downward at the second operation, obviating the danger of opening into the peritoneal cavity.

The preliminary procedure is prefaced by giving a hypodermic injection of ¼ grain of morphine sulphate one-half hour before trans-sacral anesthesia with 1 per cent novocain is administered. I have found that 5 minims of adrenalin chloride (1 to 1000 solution) gives additional duration to my bloc anesthesia and prevents untoward symptoms of mild novocain reaction due to too rapid absorption of the drug into the circulation.

Trans-sacral anesthesia, combined with abdominal wall field bloc, is one of the greatest adjuncts recently advanced tending toward the elimination of shock and aiding in improved technic of our prostate operative methods. Blood pressure apparatus and cardiac auscultation during recent cases using this form of anesthesia have frequently recorded no change in the patient's blood pressure and rate, rhythm or tone of the heart-beat or respiration change during the enucleation, where previously we expected blanching of the patient's face, rapid irregular pulse, enormous drop in blood pressure, and rapid labored respiration—all characteristic of marked shock during this part of the procedure.

Approximately one-half hour from the time of the sacral injection, my aim is to proceed with the cystotomy under local anesthesia, the bladder in the meantime having been gently distended with warm, sterile solution.

After opening the bladder, if the trigonal area and prostatic urethra are not anesthetic to pressure of the finger, I inject novocain directly into the base of the bladder and prostate. Then I proceed with the enucleation, using gas analgesia or not, as the patient desires. It is vital that this shock-producing procedure of enucleation be as rapidly accomplished as possible, not to exceed two or three minutes in cases where the trans-sacral anesthesia is not absolute. My dissection is begun by splitting the thin portion of the prostate forward from within the urethra and dissecting backward and downward on either side from the cleavage plane so provided until the hyperplastic mass is freed and delivered from the cavity thus produced without injuring more than is absolutely necessary the floor of the bladder and the membranous urethra. Strong pressure or gouging with the finger to sever the lower prostatic urethra is often necessary.

It is startling at times to note the rapidity with which the prostatic tissue proper (musculo-glandular capsule) contracts down to close the operative cavity and how completely it controls hemorrhage, provided one has not torn across the trigonal area in the dissection. Visualization of the cavity must be sufficient to be assured of cessation of gross hemorrhage. Unusual hemorrhage not controlled by visual hemostasis indicates the use of one of the various hydrostatic bags.

Closure can be made rapidly in the customary fashion over a three-quarter inch rubber tube, two or three inches in length, adjusted so that it will not make pressure of any kind in the base of the bladder or prostatic cavity.

The normal physiology of the urinary tract usually irrigates the bladder sufficiently for the first few days to keep it reasonably free from stagnant septic material. In about forty-eight hours the large rubber hose drain is removed and the gentlest kind of irrigation is given daily with warm boric acid or meroxyl solution from a slightly elevated container with soft rubber tube and catheter attached, the latter passed gently into the bladder an inch or two through the sinus. This procedure prevents collection of mucus and purulent digestive accumulation in the bottom of the bladder and prostatic cavity, which is absorbed to some extent and intoxicates the patient to the point of grave danger. This condition is often unrecognized, especially with those who are prejudiced against irrigating the bladder after operation, and the sepsis in the prostatic cavity rapidly evidences itself in the symptoms of anorexia, pallor, weakness, temperature, etc. I condemn early passage of catheter or instruments through the urethra or inlying catheter in these cases post-operatively.

It is well to be constantly on the watch for rectal impaction, a complication which patients appear to be particularly prone to develop following prostatectomy.

Dehydration positively must be avoided. Patients should have very large amounts of fluids to keep up kidney function and elimination under the strain of operative trauma, shock, and post-operative reaction. Dehydration kills more surgical patients than operative shock. Sufficient fluids should be given so that if the kidney cannot eliminate nitrogenous products in concentrated solution they will be forced to function by the very consequence of excessive dilution and excretion. Water should be given by mouth, rectum, hypodermoclysis, and, in case of urgent need, by the intravenous method, as much as 500 to 1000 cc. or more as often as indicated.

In excessive hemorrhage, patients should be typed early and transfused generously, as from this condition as from no other can the patient's vitality be

sapped insidiously until he is weakened and shocked beyond recovery, if neglected.

Operative trauma, hemorrhage, dehydration, and sepsis are our four great enemies in prostatic surgery. These complications must be avoided one by one as they appear by giving intensive attention and constant study to every detail of operative and post-operative treatment. Individualization of cases, as in no other group of maladies, is demanded, as well as constant care and attention of the surgeon to keep down to the reasonable limits of safety, a procedure that, with carelessness, readily approaches the mortality statistics of the not far distant past that are appalling.

CASE REPORTS

The twenty-eight cases of prostatic obstruction were operated by the supra-pubic method. Twenty-five were prepared for operation by urethral catheter drainage, three by preliminary cystostomy.

There was one death—case No. 22, giving a mortality of 3.5 per cent. This case was a male, aged 70, with a hyperplasia and some vesical neck obstruction. Preliminary care in the hospital covered nine days; post-operative care, seven days. On entrance the blood urea nitrogen was 33 mgms., at operation 24 mgms., and the p. s. p. test 46 per cent. The operation was done with local novocain and gas oxygen anesthesia. A moderate post-operative hemorrhage, for which a transfusion was done on the second day, was followed by symptoms of low-grade peritonitis and partial obstruction. Autopsy showed a very localized pelvic peritonitis, with no evidence of any site of entrance of infection.

The average age of the patients was 65 years. The shortest period of preliminary treatment was 4 days, and the longest 58 days; the average, 15 days. The shortest period of post-operative treatment before leaving hospital with wound healed was 16 days; the longest, 132 days; average, 31 days.

The clinical tests of urinalysis, blood urea nitrogen, p. s. p. test, white blood count, hemoglobin, and coagulation time were determined frequently during the preliminary treatment and before operation in all cases. These tests were continued until the patient was in suitable condition before operation was proceeded with.

The symptoms included polyuria and nocturia in the majority of patients, usually dating back for years. Microscopic hematuria was present in many of the infected cases. Gross bleeding from the urethra not accompanying act of micturition occurred in three cases from ulceration of mucous membrane of the intra-prostatic urethra from pressure of the hyperplastic nodule on the opposite side. Usually dysuria, retention, loss of weight or appetite, uremic symptoms or hematuria brought the case to the doctor for medical aid.

These cases were all cystoscoped and important preliminary data obtained regarding the presence of contracted vesical neck, diverticula or stones, and operation varied accordingly.

The anesthetic used in six cases was local novocain and ether analgesia during enucleation. Fourteen cases had local novocain and gas analgesia during enucleation. Eight cases were given trans-sacral and local abdominal field bloc, with four of these given gas analgesia during enucleation at the request of the patient.

The complications were hemorrhage in two cases; epididimitis in three cases; vesiculitis in two cases; bronchitis in one case; peritonitis and intestinal obstruction in one case, and fecal impaction in two cases. The Hagner bag was used in two cases.

Twenty-seven cases left the hospital in good condition; three have since died, all more than a year after leaving the hospital—one of acute alcoholism, one of acute lymphatic leukemia, and one of recurrent carcinoma, which was operated and radiated and was improved with continence until his death two years after the operation from metastasis. One reports being in poor health, but apparently his urinary apparatus is not at fault. All the rest report that they are in good health and have no remarkable urinary tract symptoms. No case of incontinence was reported.

Coincident with this series, I treated two cases by the Young punch operation, with complete and immediate cessation of symptoms and recovery.

On the face of this report it would seem that this class of case has a high percentage of complications, but when one realizes that the subjects of this study are all old men, more or less broken in health and reduced in vitality, it seems remarkable that one can succeed with such a plan of action that the formidable operative care can be administered and such a low mortality rate be maintained in the presence of so many possible complicating factors.

Inter-Mountain Clinic.

DISCUSSION

MARK BROWN, M. D. (Eccles Building, Ogden, Utah)—This article is very thoroughly prepared, and Dr. Hatch is to be complimented. All his patients were operated by the suprapubic method of Squier. This seems to be the most popular operation used by urologists and especially by general surgeons. The only indication for the perineal route is in the case of the small contracted fibrous prostate or those suspected of new growth.

I watched Hugh Young do about fifty, and must admit that he stands supreme in the perineal method. In 1912 I watched Dr. Squier perfect his suprapubic method on cadavers, and would like to say the most important step in the enucleation of the prostate is to insert the finger into the urethra until you reach the "cut-off" muscle, then work in that region with your finger in the roof of the urethra, instead of the floor, until you perforate the urethra. Now enucleate from that laterally around to midline on one side, then the other, without injuring internal or external sphincters.

In the last two years I have treated five cases of obstructing prostate of the adenomatous type by the deep x-ray. All these patients had cystitis, night frequency and retarded flow. I find the relief of the patient's symptoms as good as with surgery, but the compensation is, as the New Yorker says, "not so good." I think the retention catheter is good; yet in the last year I have seen two patients die from apparent infection from the catheter before the prostate was removed. In post-operative cases, when the patient gets an alkaline bladder with crusts around the incision and in the bladder, I find that Horsford's acid phosphate by mouth and by mild irrigations to the bladder is very effective.

W. G. SCHULTE, M. D. (Boston Building, Salt Lake City, Utah)—Prostatic hypertrophy is a loose term as generally used, and includes all those cases that show evidence of enlargement of tissues surrounding the bladder neck. It is true that the prostatic tissue usually undergoes pressure atrophy, as the tumor, myoma or adenoma, encroaches upon it, and presses it against the dense prostatic capsule.

While enlargement of the prostate is commonly found

during the fifth and sixth decades, among men leading a normal sexual life, I should not go so far as Doctor Hatch and compare it to gray hair. In a personal communication, the late Dr. J. T. Geraghty made the statement that, in his experience, simple prostatic hypertrophy was unknown among men who had abstained from sexual intercourse, but that celibacy was no bar to cancer of the prostate. That corresponds with my experience.

The indications for operation are about the same as those usually mentioned, and will depend upon the whole picture rather than on any one symptom. The cystoscope, when it can be used, is a great help in diagnosis and in deciding upon treatment.

I think most operators are agreed that some cases are safe risks operated without a preliminary cystostomy. The blood chemistry seems to be of even greater importance in determining these cases than is the P. S. P. test. Local anesthesia is becoming more generally used, and the combination of sacral and para-sacral, together with cutaneous infiltration, gives brilliant results. However, I cannot agree that the routine use of epinephrin in the solution adds to the safety of the procedure.

Doctor Hatch's emphasis on dehydration is a good point. The tendency on the part of the nurse is to neglect the fluid intake. The operator must closely check the urinary output, particularly during the first three days after operation.

JAMES R. DILLON, M. D. (516 Sutter Street, San Francisco)—Doctor Hatch has very well covered the more important points regarding pathology, symptomatology, and preparation for prostatectomy.

The prognosis of the prostatic patient is proportional to the best management, just as the successful result is proportionate to the accurate diagnosis of the pathological condition present. Refinements in diagnosis and treatment have reduced the mortality and morbidity on this basis to a minimum, and further advance must lie in the education and conviction of the general practitioner and layman that the patient should seek earlier surgical treatment and not be allowed to drift into a dangerous condition beyond surgical aid by the use of urinary antiseptics and bladder drainage by catheter. Next important to establishing the functional stability of the kidneys in the preparation of the prostatic patient is the study of the cardio-vascular system. Myocarditis, often secondary to damaged kidneys and a forerunner of uremia, is a dangerous contra-indication to prostatectomy under general anesthesia. In these circumstances it should be done under spinal or para-sacral anesthesia, after thorough preliminary preparation of the heart and kidneys.

Regarding the choice of operative technique, we find 65 per cent of prostatic patients are excellent risks, and, if carefully prepared, have good surgery and are properly managed post-operatively, should recover, no matter whether suprapubic or perineal routes are used. With the 20 to 35 per cent of poor risks, it is better to do the perineal prostatectomy under gas and oxygen or spinal anesthesia, and get those decrepit old men about in a few days to avoid pulmonary, cardiac, and renal complications. The punch operation should be reserved for fibrotic contractures of the vesical orifice, or median bar obstruction, as hypertrophy of Albarrans' glands, and is usually indicated in the fourth decade of a man's life. After the age of 50 the fibrosis has extended through the prostate, obstructing the whole of the prostatic urethra, and nothing short of a prostatectomy will give complete relief.

Suggesting a Revival of Medical Apprenticeships—"The old system of medical apprenticship had many things to commend it, but it is out of date and cannot be adjusted to the needs of the times," according to E. H. Ochsner (American Medicine). "There is, however, a real need for a system of apprenticeship and junior partnership which only the organized medical profession as a whole can work out and make operative. Such a system should utilize the vast practical experience and ripe judgment of the older members of the profession and the better technical training of the men just entering the profession and could be made equally advantageous to both, as well as the public in general."

COEXISTING LARGE FIBROID AND PREGNANCY—CAESAREAN SECTION AND HYSTERECTOMY AT TERM.

REPORT OF A CASE

By C. A. DELANCEY, M. D., *San Anselmo, Calif.*

This rather unusual case record is published, not only because it has interesting features, but particularly because of the "wild" stories about it published in some newspapers, and its treatment in the alleged "humor column" of a medical journal.—EDITOR.

MRS. X presented herself for examination because of digestive disturbances of two weeks' duration. She complained of nausea and distress at sight of food, particularly in the morning.

Further history revealed that she had missed her last menstrual period on March 4, 1924, although she had previously menstruated normally. She gave her age as 42, had been married ten years and had had no previous pregnancies.

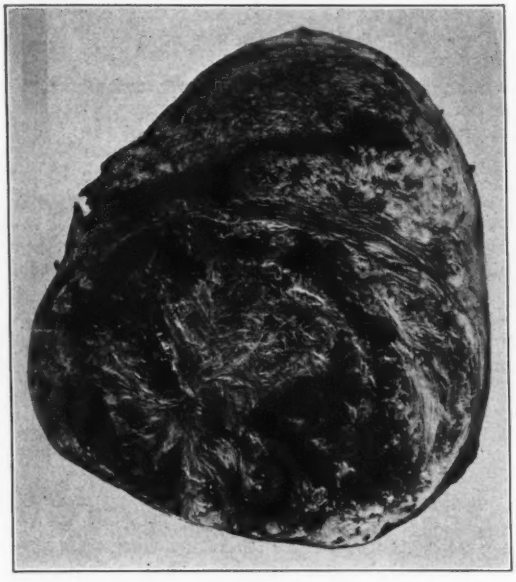
Physical examination was negative except that a large solid tumor mass extending from within the pelvis to the umbilicus was outlined. It was about the size of a six months' pregnant uterus. Questioning revealed that this mass had been diagnosed four years previously as a fibroid tumor by physicians who had advised operation. The patient, because of her desire for offspring, had refused surgical intervention.

On September 3, 1924, the patient called again, stating that she had not menstruated since March and thought she had felt life in her abdomen in July. Examination at this time revealed a soft cervix, bluish external genitals and the mass greatly increased in size, and of soft consistency. The solid mass was felt to the right and lower part of the abdomen, while to the left and lower the mass was softer. Auscultation revealed a uterine souffle and foetal heart sounds in the lower left quadrant. A diagnosis of a five months' pregnancy, complicated by a fibroid, was made at this time.

The patient's period of gestation was uneventful except for a slight nausea which she complained of during the early months. As the tumor rendered a normal delivery impossible, it was decided to perform a Caesarian section *at term*.

On December 8, the patient was admitted to the hospital and on the following day the operation was performed. A left rectus incision was made and the uterus exposed. This was incised over its thinnest portion and a normal seven-pound girl delivered. The large tumor mass, together with the uterus with which it was intimately incorporated, was removed. The accompanying picture shows the specimen.

Dr. F. E. Blaisdell, who examined the specimen, reports it as a post-partum uterus, measuring 18 cm. in length, 19.5 cm. in width, and 10 cm. in antero-posterior diameter. Anterior surface presents a Caesarian incision sinistral to center, which measures 9 cm. in length. On posterior surface, likewise, sinistral in position is seen a circumscribed tumor measuring 3 x 4 x 4.8 cm.; it projects 1.5 cm. above the surface. Midfrontal section of uterus shows a large



Post-partum uterus with Caesarean scar and large fibroid.

oval solid elastic well-described tumor measuring 12.5 x 18.5 cm. in diameters. It is intramural in position, as its outer surface is invested by a thin, compressed layer of uterine tissue, and the serosa and subserosa is distinctly recognizable external to it. The tumor is in the right uterine wall. The uterine cavity is 11 cm. in length. The left uterine wall is 7.5 cm. in thickness. Cut surface of tumor shows pearly white strands of tissue running and intertwining in all directions; in scattered or continuous areas a large amount of mucinous substance is found. The tumor cut with marked resistance. The smaller tumor shows a similar structure, except that it is subserous and contains no mucinous material, and is entirely independent of the larger one. Microscopical examination of frozen sections mounted in balsam shows: The general histological characteristics of a fibroid. Scattered through the tissue are seen groups of epithelial cells arranged in the form of glands. There is mucinous softening, and spaces varying in size are filled with the mucinous material (gelatinous after fixation). No mitotic figures have been seen. In small areas near surface, groups of round cells and leucocytes are seen. Tumors are well-defined and apparently benign. Diagnosis: Adeno-fibro-myoma (intramural). Small fibromyoms (subserous).

The interesting features of the case are the normal, full-term development of the fetus in a fibroid uterus: Patient ten years married without previous pregnancy; conception at the age of 42; excellent recovery of both mother and child, following Caesarean and hysterectomy; absence of hemorrhage during gestation; justification for hysterectomy at the age of 42; complete preponderance of fibroid over uterus.

TREATMENT OF FRACTURE OF THE NECK OF THE FEMUR

By ETHAN H. SMITH, M. D., *San Francisco*

I SHALL not go into any unnecessary description of the hip-joint, or the various methods of treating the above-mentioned fracture. One method alone will suffice for nearly all cases, if properly applied.

As soon as I mention the method, I can hear many of my confreres say, "That is old." The main features of the method are old. So is the discovery of the circulation of blood. So also is the sunshine old, but it is still good.

Weight and pulleys in the straight position, with sand bags of the proper dimensions, properly applied, give ideal results, which are unequaled or unexcelled by any other method.

This method can be applied by a doctor all alone, anywhere that he happens to come to a patient, if necessity compels. Of course, the ideal place is to have the patient in a modern hospital. I would not think of treating a patient elsewhere, unless positively obliged to do so by force of circumstances.

The bed should have some thin boards placed under the mattress and over the springs from the level of the patient's shoulder blades to the feet. These boards should not impinge on the side rails of the bed, and should cover the springs only. The boards off an orange-box would do admirably. An anesthetic is never necessary. This fracture can be properly reduced and dressed without any unreasonable pain to the patient. Anesthetics cause a large number of fatalities in elderly people. If there were no other reason to recommend this method above all others, the avoidance of an anesthetic is ample reason why it is better than any other method.

The lower extremity is put in a straight position. A good quality of real moleskin plaster must be used.

Use two thicknesses of plaster. Have the strips five to six inches wide at the top, tapering down to three inches at the foot. Notch the margins of the plaster so that it will fit without wrinkles over the thigh, knee, and leg. Bandage the foot *always*. Use flannelette bandages, two and one-half inches wide and six yards long. After applying the plaster, be sure that it projects below the foot fully five inches. Make two holes in each lower end of the plaster, into which button a spreader, forked at each end, so as to button into the plaster. Having the two prongs to button into the plaster prevents the plaster from wrinkling and making sores on the leg. To this attach a cord with from fifteen to eighteen pounds in the adult. Excessive weight will defeat the purpose for which it is applied, by causing muscular spasm, and affords great discomfort to the patient.

Next have the sand bags ready—one 5½ inches in diameter by 4 feet in length, and another 5½ inches by 3 feet in length. Two smaller sand bags, each 4 inches in diameter by 2 feet in length, and one small sand bag 5 inches wide, 3 inches thick, and 10 inches long. Have an assistant grasp the ankle and make traction while the surgeon places his hand behind the trochanter major. While the assistant gently rotates the foot and leg inward, the surgeon

lifts the trochanter forward, and places the smallest sand bag behind the trochanter.

This feature of the dressing is the new feature in comparison with the rest of the dressing. The lack of the sand bag behind the trochanter was the one weak spot in this dressing during all the years it was in use. About fifteen years ago I began using the small sand bag behind the trochanter. It gives ideal results. After placing the small sand bag behind the trochanter, the longest sand bag is placed beside the patient's hip from the waist down to below the foot. The next largest sand bag is placed on the inner side of the thigh and leg. (I omitted to mention that the thigh and the leg are laid on a pillow placed lengthwise from just above the heel to above the knee, so as to prevent pressure of the heel on the mattress. This pillow is brought up around the knee and leg, and the sand bag is placed outside of it. Then two small sand bags are placed one on either side of the knee, the middle of each sand bag being just about opposite the patella. The upper end of the large sand bag is fastened to the pelvis by means of a binder going around the patient's hips, and around the end of the sand bag. Pads are put in over the bony prominences wherever needed. Then the two large sand bags are tied by means of a strip of bandage around the upper third of the thigh, another strip just above the knee, a third just below the knee, and a fourth a few inches above the ankle.)

The patient's body can be raised and lowered without interfering a particle with the fracture. The patient can be placed in almost a half-sitting posture, thus giving relief to the pulmonary circulation. That is vastly more comfortable than any other dressing, fulfills every requirement, and is the safest dressing in use today.

Necessity for operation very rarely occurs in fracture of the neck of the femur.

Flood Building.

Significant Extracts From Letters

"We were looking forward to a new baby due to be born in February. My wife died last August. We are still receiving letters from two sources full of optimism and advice about baby clothes and other matters. What can I do to stop these grief-renewing epistles?"

"Dear Better Health Editor—What can a grief-stricken mother do to stop monthly letters of advice about what to do for my baby, originally expected this month, but which I lost two months ago?"

"Dear Better Health—I am expecting my baby in March. The lady specialist at the —— Health Center has been telling me what to do and what to eat. One day, not very long ago, I felt very badly and the health center was not open. I went to see Doctor ——, who told me my urine was very bad and my blood pressure 185. He said I needed better care than I had been having. Whom shall I believe?"

The Written Word Is the Doctor's Permanent Background—"Whatever work we may do, either clinical or investigative, it will do little general good and will lose much or almost all of its effect unless the noteworthy part of it is promptly and well reported in the medical press, which itself indeed cannot grow and prosper unless the profession gives it the material by which it can live and grow.—Charles L. Minor, M. D. (Southern Medical Journal).

EDITORIALS

LEGISLATION AND HEALTH

The California legislature now in session has before it some 2000 bills, of which more than 10 per cent are about health. Some of these laws are constructive, others are of indifferent value, and too many are destructive and some even vicious in their bearing upon health and welfare. The League for the Conservation of Public Health has examined these laws from the standpoint of their health value and has prepared a digest of some 100 of the more important of them.

This review is based upon the laws as first printed, bearing in mind that most of them will be more or less amended before they came to a vote. The review is published in full in the March issue (February 20) of BETTER HEALTH, and several of the more important laws are discussed editorially in the same issue. BETTER HEALTH of the April and May issues will continue the comment upon the doings of the legislature, and in the issues following the adjournment of the legislature will analyze the health laws that come out of the "hopper."

Readers of CALIFORNIA AND WESTERN MEDICINE who are interested in legislative matters are invited to send comments and suggestions to the League office. Copies of telegrams, letters, and personal advice given to members of the legislature will also be of assistance in legislative publicity.

OLD AGE AT ITS BEST

The widely known and much-beloved physician, Doctor W. W. Keen, passed his eighty-eighth milestone on January 19. "Young men shall dream dreams and old men shall see visions," says the Holy Word. Doctor Keen is not only seeing visions, but he is interpreting them in language that travels round the world. We catch a glimpse of a vision in his "The Ministry of the Biological Sciences" published recently, the opening and closing paragraphs of which read:

"The more the religious man, and especially the clergyman, knows of science, the broader becomes his vision. Through study of the heavens above by the telescope and the spectroscope; and of the earth beneath by geology, chemistry, physics, etc.; and of the inhabitants thereof by anthropology, archeology, biology and other sciences, the wider becomes his horizon. These sciences deal with the works of God and, rightly interpreted, they must agree with the message of God in the Bible (also rightly interpreted), for both have a common origin—Almighty God. Any clashing of these views must depend on partial knowledge, i. e., on our ignorance of much as yet undiscovered, either in the Bible or in Nature, or on a misinterpretation of either. That we have learned so much is a happy augury for future wider and profounder knowledge.

"Revealed religion links itself with biology, and proclaims the blissful certainty of the Immortal Life through the incarnation and the atoning death of our

Lord Jesus Christ, our Blessed Saviour, the divine Son of the ever-living God."

We get another glance of one of the visions of this great Christian physician in his article on "Freeing Mankind From Disease" (Collier's, November 8, 1924), in which after a concise summing up of what has been accomplished in health progress, he says:

"And we are advancing toward even more wonderful things. When it will come no man knows; but of one thing I am certain: the day is sure to dawn, when, after thousands of years of bondage, mankind will be emancipated from cancer and many other diseases."

THE FIFTY-FIFTY BUBBLE

President Coolidge has effectively exploded what is known in Congress as the fifty-fifty appropriations bubble. This "movement," now costing in excess of $100,000,000 a year, was just getting started. "I am convinced," says our President, "that the broadening of this field of activity is detrimental both to federal and state governments. Efficiency of federal operations is impaired as their scope is unduly enlarged. Efficiency of state governments is impaired as they relinquish and turn over to the federal government responsibilities which are rightfully theirs. I am opposed to any expansion of these subsidies. MY CONVICTION IS THAT THEY CAN BE CURTAILED WITH BENEFIT TO BOTH THE FEDERAL AND STATE GOVERNMENTS."

Under this pernicious scheme congress appropriates funds to the states, and says to them in effect:

"You can have this $100,000,000 if you also will appropriate another $100,000,000 and use it as certain federal officials in Washington tell you to use it; but it must be used strictly in accordance with instructions from Washington and under Washington supervision."

Of all these sinister measures, what is now widely spoken of colloquially as the Sheppard-Towner bribe, is the least excusable and most mischievous. It was once popular with certain people, but never at any time had the substantial support necessary for the sustained promotion of health progress. Most of its one-time advocates now speak of it apologetically, and since the President's definite stand has been so widely and generally endorsed, Sheppard-Towners are hard to find. Several states never have accepted the provisions of the "subsidy" law. The reasons for refusal to accept its provisions have been well summed up by Governor Baxter of Maine, who said in a much-quoted statement:

"I protest against the Sheppard-Towner bill: Because it is an unwarranted invasion by the federal government of the sovereign rights of the state of Maine; because it establishes in Washington a federal bureaucracy that is not likely to be in sympathy with the government of this state and the citizens thereof; because it *invades the privacy* of our homes; because it infers that the state of Maine cannot and will not properly care for those of its mothers and children who need assistance; because it pauperizes our state."

Where Congress Gets the Money — Financial agents of state after state are now pointing out the fact the fifty-fifty "Federal Subsidy Funds," or "bribe funds," as many designate them, are obtained in the first instance from the taxpayers, and that *only a portion of the money collected* ever finds its way back to the state that collected it. California is among the states that suffer the greatest loss between the amount of taxes paid to the federal government and the fifty-fifty returns. This has been repeatedly published in the press of the state.

The Operation of the Law—Of course, it is the principle rather than the amount of money involved that is most widely condemned, but there are some interesting, some humorous and some pathetic incidents connected with the enforcement of these fifty-fifty laws—and particularly of the Sheppard-Towner one—which has proved to be the straw that broke the fifty-fifty camel's back.

OBLIQUE ADVERTISING

This term needs no definition. It was the subject of serious discussion at the recent meeting of the British Medical Association in connection with the report of the Central Committee on Ethics. The report of the committee states that:

"During the past few years there have been brought to the attention of this committee certain journalistic developments which seem likely, if unchecked, seriously to undermine some of the most cherished traditions associated with medical practice, and to lower the reputation of the profession among the more thoughtful sections of the community."

Some abstracts of the various rulings of the association upon the various phases of oblique advertising are deserving of thoughtful consideration by all physicians:

Referring to the subtle and indirect method of giving publicity to certain medical practitioners through the public press, sometimes without and sometimes with the active consent of those referred to, the British Medical Association issued the following warning to their members:

"The practices by a member.

"(a) Of advertising, whether directly or indirectly, for the purpose of obtaining patients or promoting his own professional advantage; or, for any such purpose, or procuring or sanctioning or acquiescing in the publication of notices commending or directing attention to the practitioner's professional skill, knowledge, services, or qualifications, or depreciating those of others; or of being associated with or employed by those who procure or sanction such advertising or publication, and

"(b) Of canvassing or employing any agent or canvasser for the purpose of obtaining patients; or of sanctioning or being associated with or employed by those who sanction such employment; are in the opinion of the council contrary to the public interest and discreditable to the profession of medicine, and any member who resorts to any such practice renders himself liable on proof of facts to have hs name erased from the Medical Register."

In discussing the whole question of oblique advertising and the action of the association, the Lancet says: "Examples of the newer methods are to be found in interviews granted to newspaper representatives, and in signed letters or articles sent to newspapers. In many of these, members of the profession, either by direct assertion of the journalists concerned, or by more indirect methods, are referred to as possessing, or allow it to be inferred from

their own words that they possess, methods of treatment superior to those practiced by others.

"It is the recognized duty and right of a medical man to take his share as a citizen in public life, but there is no reason why this should involve any advertisement of himself as a doctor, and, with due care, improper advertisement can be avoided.

"Publicity is rightly allowed to medical men not in actual practice of their profession, since they cannot be regarded as using this publicity for the purpose of promoting their own professional advantage, and in view of the official position of medical officers of health and other medical men who hold posts in either the public health or other public service, publicity is sometimes not only permissible but necessary for the fulfillment of their official duty. The presumption in all these cases is that publicity is not sought for the individual's own gain, though it is possible that the practice might be abused and the presumption therefore fail.

"The publication of books and the delivery of lectures on semi-medical topics which are of general public interest and require medical knowledge for their proper presentation have been recognized as legitimate, subject to the avoidance of methods which tend to the personal professional advantage of their authors. There are many things innocent in themselves which may, by the manner and frequency of their doing, gravely contravene the principle that medical practitioners should not advertise.

"Speaking generally, it may be said that the medical men most often quoted in the press are not those whose opinions carry most weight with the medical profession or with the educated public. It is natural that those whom the press representatives most eagerly seek to draw into their service and utilize for their own advantage are those who have some recognized position or well-sounding address or title. It is, therefore, especially important that a stand should be made by such practitioners, who perhaps do not realize that the example set by them may well be pleaded in justification by those in a less prominent position.

"The Association is convinced that, in taking up an attitude of determined opposition to these undesirable journalistic methods, the Association is acting in the best interests of the public as well as of the medical profession.

"The extension of the advertising habit among the profession in general would certainly destroy those traditions of dignity and self-respect which have helped to give the British medical profession its present high status, and would gravely undermine the amenities and harmonious working of medical practice.

"If only those whose reputation is mainly derived from the newspapers allow their names and opinions to be quoted or to appear as those of 'the eminent' physician, surgeon, or specialist, the practice will die a natural death."

SOMETHING TO THINK ABOUT

AN EDITORIAL CHAT WITH PHYSICIANS ABOUT AUTHORSHIP

In speaking on medical publicity before the Kings County Medical Society of Brooklyn, Arthur Brisbane (Long Island Medical Journal) stated:

"Medical knowledge and publicity are to human life what knowledge of engineering is to the machine, or the knowledge of mechanics to his automobile. . . . The problem is to get the information you possess into the minds of the more simple. . . . Remember, *repetition is reputation.* What we hear over and over we know. I think in that way (short daily articles) you could solve the problem you put before me of medical publicity. . . . After all, every man is glad to give information. . . . I shall be very glad to co-operate (in medical publicity) and I have considerable publicity with which to do it. I may have to do it on a small scale as regards space, but the smaller the space the better. *If you can express yourself in a few lines, everybody will read your message, while if you put it in ten columns, not one in ten thousand will read it.*" Thus speaks one of the most experienced, highest paid and most widely read authors in the world.

Whether we believe what Brisbane says about many things or not is irrelevant. What does matter, and what we as physicians in particular may learn from Brisbane and numerous other widely read authors is, that "brevity" is still "the soul of wit."

Physicians are among the oldest and most prolific writers, and yet we appear to be slowest in learning the most important lesson of successful writing—brevity. Yet, as *readers,* the lesson is before us all the time. As readers we follow precisely the same instincts that govern other people: *we shun the long article.* Rather than wade through thousands of words to find something worth while, even in an article on an important subject by a well-known authority, we lay it aside and wait until someone has prepared a brief abstract and read that. No physician, even one who does nothing else, can do otherwise and keep abreast with medical news. This fact explains the growing number of successful businesses devoting all of their time to abstracting medical literature for their subscribers.

Should this not teach us a lesson? Every medical author writes from legitimate and commendable motives: The desire to contribute something to medical knowledge; the desire to be the contributor and the desire to extend his personal reputation among his colleagues. These are precisely the motivating influences of all writers, the only difference being that, in all other fields, the author also depends upon the income from his writings for a livelihood. Surely, our commendable motives for writing should be important enough to induce us to recognize and adopt the methods that make for success in authorship in other fields.

This most of us do not do. We are learning, but we must learn faster and more universally. Medical journals should be as interesting to physicians and others working in the broad field of medicine and health as are public magazines in their fields.

To bring this about requires that authors should give the same serious study to their written words that they do in their methods with patients. In the latter, they strive for the simplest, most direct methods, and the utilization of the smallest possible amount of the time of patients consistent with thoroughness. Interesing style, consistency, conciseness,

brevity are even more important to a medical author.

Progress in medical authorship is encouraging. It has moved faster during the past few years than in previous generations. The motivating influence is the growing invasion of the field of medical writing for public readers.

During the several years that medicine and health education publicity has been carried forward by physicians in California, through Better Health magazine and the San Francisco Examiner Better Health services, there has been a noticeable improvement in the writing of hundreds of physicians. We all frankly admit that it requires more effort to prepare a successful message for popular readers than it does for medical readers.

So it *does*, but *should* it? After all, the fundamental requirements for success are precisely the same.

SHALL WE HAVE TWO MEDICAL PROFESSIONS?

Shall PERSONAL HEALTH PHYSICIANS and PUBLIC HEALTH PHYSICIANS be developed into two separate professions or shall *public health practice* be continued as a *specialty of medicine*—as it always has been—constitutes one of the very important health progress problems.

It is everyone's problem, and it will be solved. As a matter of fact, it is moving toward solution constantly. What that solution may be cannot be predicted at present. But we can look dispassionately at the forces tending to influence the final solution and thus determine our duties and responsibilities as physicians and citizens.

Certainly, the larger majority of those physicians who consider their attainments as assets to be used primarily and with reasonable unselfishness in improving the general health welfare of humanity believe that *public health practice* should constitute a specialty of general medicine practice. On the other hand, a minority of physicians supported and largely led by great non-medical organizations and wealthy foundations are out definitely and openly to *split medicine into two separate professions.*

There is more propaganda given out under the guise of informative publicity supporting such a division than upon any other single phase of health. The burden of most of the arguments is to the effect that the seven years of special education above high school required of all Doctors of Medicine, while it prepares them to practice *personal* health medicine, does not prepare them to practice *public* health medicine. They argue that a few weeks or months extra study, usually in specially designated schools, does prepare the personal health physician to practice public health, medicine, and that even a much shorter course in certain schools will prepare students, *not medically educated,* to practice public health medicine. Or, in the parlance of the propagandists, it prepares these non-medically educated persons to become "efficient health officers."

Nor is this the whole aim of those promoting the idea of two separate and distinct medical professions. During the last year in *official* government documents and reports of voluntary organizations, the announcement has been frequently made that public health medicine included personal health practice—"preventative AND CURATIVE."

This serious move concerns all people, and it is being actively promoted by powerful influences. In claiming broadly for everyone to read, that the education of a Doctor of Medicine "does not fit the physician to practice public health medicine," these propagandists are thus encouraging the non-medical public to arrive at the logical conclusion that if such a physician is incapable of serving the public health he must also be incapable of serving the family or individual health requirements.

WHAT ARE THE FACTS?

Out of over 3000 counties and over 6000 cities and municipalities in the United States, there are less than 500 that engage the full time of even an educated licensed physician "health officer."

We would like to suggest to these propagandists that before they criticize the educated physician too strongly as being incapable of doing for the *public* health what he is doing for *personal* health they get rid of the quacks and other incompetent "health officers" that have not even a medical education and who now hold authority in hundreds of places.

It also is appropriate to call their attention to the bad taste and perfidy of criticizing the thousands of educated physicians who are carrying on public health duties for the vast majority of our people in most places for a pittance of from $5 to $25 per month.

If there is not money to pay even the alleged incompetent doctor of personal health medicine enough to buy gasoline with, how do they expect to pay their specially and superiorly educated doctor of public health medicine to devote all of his time to such work?

Every educated physician endorses the idea of special education for specialists. This whether the specialty is surgery, obstetrics, or public health. *But the public welfare and the public health is not advanced by trying to reach an ideal by destroying what we have.*

The worthwhile public health physician still considers himself as much a part of the medical profession as does the surgeon, the obstetrician, or any of the other several specialists of a great profession.

MORE ABOUT FEE SCHEDULES

In commenting editorially upon the controversy which grew out of the fee schedule adopted by the District of Columbia Medical Society still going on in the public press, the Texas Journal of Medicine believes:

"The issue is whether doctors have a right to agree on the value of a service which even the most violent dissenter must recognize as strictly personal, and one involving both knowledge and skill."

The Dallas News, in criticizing doctors' fee schedules, editorially urges: "If the musician had to sing for his audience one at a time, his prices would be much higher, and his services would then be rendered under comparatively the same conditions as physicians who render individual service."

The threat is also made in this and other newspaper editorials over the country that, unless doctors

pause in this "unionized labor" method of "price fixing" and "working conditions," the public will force "open shop" methods through "collective service enterprises," such as "health insurance," "clinics," "health centers," and what not.

"The Dallas Chronicle agrees that doctors have the same right to fix their fees, a practice usually granted to plumbers and carpenters, and concedes that the doctor is just as necessary to the health of the community as the plumber."

Press clippings indicate an astounding public interest in doctors' "fee schedules," and at the same time a remarkable variety of opinions as to what should and should not be done. So extensive and energetic has been the nationwide reaction to the Washington doctors' fee schedule, that medical leaders would do well to restudy the problem. As stated in our last month's notices, papers in general sympathetic to organized labor practically all endorse the doctors' action and some predict that the next step will be affiliative with the A. F. of L. Other papers, for the most part, criticize the doctors and many of them are bitter in their denunciation. A substantial number of editors point out that it is actions of this sort that makes friends for those who are out to make personal and public health a "public utility" either operated by the state as education now is or operated by great corporations under state supervision. *It is pointed out that doctors appear to be blind to the progress being made in both these directions.*

Of course, most thinking physicians are not "blind" to either what is being done, who is doing it, nor to the plans that are still, for the most part, in the chrysilis stage. The trouble is that doctors are not really organized and there is little to indicate that they can be organized so as to do effective team work. This may or may not be a fault, but in any event it is a fact. It is largely explained by the fact that doctors, by education and in their life's work, are individualists. Their work is highly personal and they are thus personally competitive in the best meaning of that word. The nature of their service is calculated to make dictators out of them, and, as a matter of fact, every doctor, whether he appreciates the fact or not, becomes a benevolent dictator to his clients. It could not well be otherwise—nor should it. However, this spirit so essential in his life's work is calculated to make of him a "bad risk" as an organization man. In the aggregate, he is fine as a leader—when he has time—but he is not strong in accepting the reins of organization, however gently pulled by leaders of his own choice in his own organization, working to uphold and strengthen the cause he serves. In other words, he is a poor private, but a splendid and much-loved captain of those he serves.

We see the results quite clearly in any discussion of "fee schedules" and it is, of course, equally clearly demonstrated with almost any other question that requires both leaders and followers to carry out as a "team measure." *There is not now and never has been an effective "fee schedule" in any county, city or other community.* Only from 30 to 60 per cent of the physicians of the various communities are even members of their medical societies to start with, and no "fee schedule" has yet been devised and made effective for all of those who are members, to say nothing of the others.

A percentage, not by any means small, of physicians believe that *a personal fee schedule is an essential and indissoluble part of the personal service that physicians render to their patients and clients.*

There are some tens of thousands of physicians who earn their livelihoods from salaries and by other methods and are not interested in fee schedules. Then there are many, many doctors who do their work under forms of commissions, so much per person per month, or so much per unit of service, all being fixed and managed by government, other employers, insurance carriers, officers of organizations or what not, and in no instance subject to control by physicians either individually or collectively.

These are only a few of the many reasons why we, as physicians, ought to rehearse several things pretty extensively among ourselves before we tackle the big Berthas of business and organization on the one hand, and the emotional, uncertain and fickle jade, public opinion, on the other, with important matters of organization policy and public welfare.

LEAD POISONING FROM ETHYL GASOLINE

Probably no other metal is used in so many different forms and on so vast a scale as is lead. The result is that actual and potential poisoning from lead is greater than from any other metal. It is greater today than at any previous time in the history of civilization. Various aspects of lead poisoning were discussed in a symposium before the Section of Pharmacology and Therapeutics of the American Medical Association in Chicago last June and also previously in these columns. These discussions leave the impression that much still remains to be learned about the nature and the treatment of lead poisoning. Until recently very little has been said about possible poisoning from the organic compound, lead tetraethyl, in its new rôle.

Lead tetraethyl is being used extensively as a constituent of "ethyl gasoline" and of various trademarked "anti-knock" mixtures. According to a recent investigation of the Bureau of Mines of the Department of the Interior in Pittsburgh, Pa., "ethyl gasoline" is ordinary motor gasoline to which has been added about 0.04 per cent of lead tetraethyl and 0.06 per cent ethylene dibromide by volume. The object of the lead tetraethyl is to eliminate the detonation or "knock" in internal combustion engines, thereby increasing the economy of fuel consumption and the mileage per gallon of gasoline and permitting the designing of more efficient engines. During combustion, the lead tetraethyl is converted in the presence of a halogen carrier, ethylene dibromide or trichlorethylene, to lead bromide or chloride, which is non-volatile, insoluble, and mostly deposited in the engine head and exhaust pipe in the form of scale or white deposit. The remainder is discharged with the exhaust gases, the larger particles falling to the floor or street, and the very small ones (approximately the size of smoke particles) remain suspended in the air. In addition, a good deal of the lead forms a sulphate, the sulphur coming from the

gasoline; some occurs as oxide, and a small amount as metallic lead. Hence, there is a possibility of lead poisoning from inhalation of atmosphere containing the exhaust gases. Another possibility is from handling the "ethyl" products and gasoline, owing to pulmonary and skin absorption.

The toxicological work of the Bureau of Mines deals with exhaust gases from engines using ethyl gasoline as commercially sold. The exposures were made to simulate the worst conditions as to time of exposure and concentration of gas in the air to which persons might be exposed without being poisoned by the carbon monoxide of the exhaust gases. The tests were continued over a period of eight months in order to bring out cumulative effects. Several species of animals (dogs, rabbits, monkeys, guinea pigs, and pigeons) were exposed for certain periods (up to six hours daily). Observations of growth, body weight, blood changes, symptoms of lead poisoning, pathological changes and lead storage in organs were also made. The amount of lead retained by men inhaling lead dust was also determined.

As far as retention of lead by human subjects was concerned, it was found that the inhalation of from 0.018 to 0.293 mgm. lead per cubic foot of inhaled air caused a retention of from 0.002 to 0.049 mgm. per cubic foot, or a range of from 8 to 27 per cent, average 15 per cent. It is stated that this behavior of the lead that remains in the air as suspended matter greatly reduces the dangers of lead poisoning. The investigators appear to regard the lead retention studied by their method as indicating pulmonary retention, but they also mention the possibility of retention in the nasal passages and throat and of swallowing or expectoration of the lead. The exact path of absorption is practically immaterial, because absorption of lead can occur from both the pulmonary and gastro-intestinal tracts. Probably the gastro-intestinal tract is of greater importance in man from the facts that contact with the hands after handling of lead is frequent and that certain investigators have demonstrated poisoning from the inhalation of a more volatile metal than lead, namely, mercury, without recognition of the metal in the lungs. Symptoms of chronic lead poisoning in man may develop only after continued exposure for months and years. Under modern conditions of intensive use of motor vehicles, for instance, in large and congested cities or on congested highways which teem with automobiles stirring the leaded dust and smoke for miles, day and night, the possibilities of both acute and chronic poisoning are apparent. In California, the passage of 60,000 automobiles in a day past a given point on a certain highway has been reported several times, and in this region the mitigating influences of rains and other weather conditions on the leaded dusts, etc., for the greater part of the year are absent. This puts the hazard of lead poisoning in a still different and menacing aspect.

As far as the exposure of animals to the different concentrations of lead that were used in the Bureau of Mines is concerned, poisoning, together with other changes in blood, body weight, etc., were negligible. Control or unexposed animals showed about the same changes, so that any changes could not be attributed to the lead of the exhaust gases. With the exception of animals dying from causes ascertained to be other than lead, all remained normal as to activity, growth, appetite, and general signs of health. Any symptoms occurring were dismissed as not being in accordance with chronic lead poisoning. However, a period of eight months seems hardly long enough for ultimate determination of changes and symptoms of chronic poisoning, and the Bureau is continuing observations of certain animals for longer periods. It was found that lead storage in twenty-five analyses of carcasses, excepting digestive tract and skin, was of no significance from the standpoint of lead poisoning. The majority of the analyses showed 0.003 mgm. of lead in 100 gms. of body tissue, a quantity similar to that of unexposed or control animals. The investigators mention that considerably larger quantities (0.9, 2.08 mgm., etc.) than found in animals have been reported as occurring in proportionate weights of human tissue from individuals having no symptoms of plumbism and no recent exposure to lead. This suggests the possibility that ultimately lead may be regarded as a normal constituent of the tissues and excreta.

The results of the Bureau of Mines and other investigators indicate that lead is a constant constituent of unpoisoned and apparently normal animals, though it probably was not intended that way by nature. Such animals must have been, and perhaps most of us are, exposed to lead at some time. Even if man is not directly exposed to the metal, lead may conceivably occur in his tissues. An increase in the indirect occurrence perhaps may be looked forward to, for when the extensive and increasing use of motor vehicles, flying machines, etc., is contemplated, the spraying of our vast countryside with lead gives pause for thought. The leaded vegetation consumed by animals will produce stores of lead later to be consumed with meat, to say nothing of the direct consumption of certain leaded vegetables by man. In this connection, the reports of certain British veterinarians on the occurrence of lead poisoning in grazing cattle, in poultry, etc., and of the poisoning of land are of interest. This shows the problem of chronic lead poisoning in its larger proportions. The Bureau of Mines concludes that the only danger of lead poisoning from products of combustion from ethyl gasoline seem to be confined possibly to the mechanic who is continually cleaning carbon from motors, and although this is but a possibility, it merits precaution. In summing up the investigation it is stated that there has been no indication of plumbism in any of the animals used, though they were exposed for 188 days during a period of approximately eight months to exhaust gases from "ethyl gasoline" in concentrations with respect to lead content that are several times that allowable from the standpoint of carbon dioxide. Further work on lead poisoning in dogs and monkeys, and which it is hoped will cover the desired feature of greater chronicity, will be looked forward to.

It should be added that lead triethyl, which is closely related to lead tetraethyl, is poisonous to animals, but only after some time. That is, the lead is liberated gradually, and the occurrence of serious

symptoms is delayed. This was the compound originally used by Harnack in 1878 for producing experimental chronic lead poisoning. Further investigation along different lines may reveal, therefore, that lead tetraethyl, as a constituent of "ethyl gasoline" and similar mixtures, is a greater hazard than appears at present. When the difficulties of the diagnosing of early lead poisoning are borne in mind, the entire subject is certainly far from being closed. On the contrary, certain approaches are just being made, and, if confirmed and extended, may ultimately give a better understanding of the nature, prevention and treatment of chronic poisoning in man.

1. Sayers, R. R.; Fielding, A. C.; Yant, W. P.; Thomas, B. G. H., and McConnell, N. J.: Exhaust Gases from Engines Using Ethyl Gasoline. Reports of Investigations, Department of the Interior, Bureau of Mines, Serial No. 2661, Dec., 1924.

2. Craig: Vet. J., 1924, 80:26; Gimmell: Vet. J., '24, 80:45; Gardner: Vet. J., '24, 80:13.

3. Harnack: Arch. exp. Path. Pharm., 1878, 9:152.

THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA. CALIFORNIA MEDICAL ASSOCIATION

The above old and new titles of our state association form a baffling and elusive puzzle to the general membership of the California Medical Association. It recalls our childhood struggle to decide if Ernest Seton-Thompson was Ernest Thompson-Seton, or some other Ernest.

By a differential diagnosis, the points of similarity and of dissimilarity may be pointed out and the blurred picture become clearly defined.

POINTS OF SIMILARITY

1. Both the California Medical Association and The Medical Society of the State of California have been titles used for our state association.

2. Both societies have the same dues and the same fiscal year.

3. Both societies use the same secretary and almost the same membership cards.

POINTS OF DISSIMILARITY

1. The California Medical Association is the present name of our state association. The Medical Society of the State of California is the former name of the state society, now used by a society formed of a group of members of the California Medical Association who desired optional medical defense furnished by the legal staff of the state association.

2. The dues of the California Medical Association are paid to county secretaries. They are NEVER PAID TO THE STATE SECRETARY. The dues for optional medical defense are paid direct to the secretary of The Medical Society of the State of California who, to add to the confusion, is one and the same as the state secretary.

3. The stationery, membership cards, assessment statements, etc., of the state association are printed on white paper. The stationery, membership cards, assessment statements, etc., of optional medical defense furnished by The Medical Society of the State of California are printed on brown paper.

SUMMARY

Pay California Medical Association dues and also your county dues at one time to your county secretary; pay your optional medical defense dues to The Medical Society of the State of California, with offices at 1016 Balboa building, San Francisco.

THE ATLANTIC CITY SESSION OF THE A. M. A.

Reduced Railroad Fare to Atlantic City

The rate of one and one-half fare for the benefit of members and Fellows of the American Medical Association who will attend the annual session in Atlantic City, May 25-29, has been granted by the railroads. The member, when purchasing his ticket pays the full one-way fare to Atlantic City, at the same time securing his certificate from the railroad agent. This certificate will be approved at Atlantic City by the secretary of the association, must be validated by a representative of the railroads, and will then entitle the holder to a return ticket at one-half fare. The validation desk will be located near the Registration Bureau on the Steel Pier.—A. M. A. Journal, February 14, 1925.

CALIFORNIA PIONEERS IN PHYSIOTHERAPY DEVELOPMENT

Hahnemann Hospital of the University of California did pioneer work in establishing a large, well-equipped physiotherapy department, with doctors to prescribe and trained physiotherapists to apply these instructions in the treatment of disease on a large scale.

Stanford University Medical School did pioneer work in establishing the first scientific course for the training of physiotherapy technicians. The California Association of Physiotherapists again were so far-seeing in their method of organization that their constitution and by-laws have largely been adopted elsewhere and by their national association. Columbia University has recently added courses of instruction modeled upon those of Stanford, and hospital physiotherapy departments modeled upon the one at Hahnemann are now widely scattered.

We have only recently heard that Robert A. Kilduffe has resigned his position as Medical Director of the Los Angeles branch of the Pacific Wassermann Laboratories, and contemplates returning to the East. Though Dr. Kilduffe has been in this state but a comparatively short time, he has firmly established his reputation as a careful and reliable serologist, as well as a laboratory worker from whom valuable contributions could be expected in his chosen field. As a matter of fact, the employment of men of the type of Dr. Kilduffe can only redound to the benefit of institutions seeking the patronage of reputable physicians, who in turn fully appreciate the value and limitations of laboratory assistance in their work, and know full well that only too often many so-called technicians employed in commercial laboratories are incompetent, untrained youngsters, far better equipped to act as messengers or janitors than as serologists. We almost feel that the profession in Los Angeles must have neglected its opportunities in permitting Dr. Kilduffe to leave their midst. It might be interesting to hear from them as to his reasons for going. Possibly the Pacific Wassermann Laboratories might throw some light on the matter.

Is It Too Late to Begin?—"It is useless to look to the courts alone for any material help in dealing with cults, double standards of professional education requirements, or the perpetration of frauds by crooked doctors. *The first thing to do in every state is to procure an act of the legislature that will reflect wisdom and justice,*" is the opinion of H. E. Kelly of the Chicago bar.

Medicine in the Public Press

Besmirching the Memory of the Beloved Pasteur—The author of a so-called health column in a San Francisco newspaper, in speaking of the illustrious Pasteur, says that he was a "man of shallow, showy parts and superficial acquirements, pre-eminently a self-seeking advertiser and money-changer."

"Are the Colonel's Lady and—"—"Some time ago," says Warden Johnson of San Quentin Prison, "comparisons were made between mental ratings given to various prisoners by the prison employes and those secured by mental tests. It was found that they were almost identical. Depending on your personal viewpoint, you could say that the psychologists had done very well in this case, or that the prison guards were very efficient."

When Will California Learn This Lesson?—Dr. Howe, Director of Medical Inspection of Public Schools in the State Department of Education, New York, insists that it is not the policy of the Department of Education to have medical and preventive work performed in the schools. They strongly oppose it and advise against it. The function of the schools is education in health and health matters, and all vaccinations, immunizations, corrective work, etc., should be done outside the school by the family physician, or at a dispensary.—New York State Journal of Medicine.

Increased Social and Moral Responsibility Rather Than Technical Skill Needed—"The school ideal must be shifted. The school must train not for efficiency alone, but it must be the instrument of liberal culture," believes Edward W. Bok (Scribner's); "the means of awakening and ministering to all the higher instincts; the means of refining the soul and purging it of all that is base and ignoble; the means of stimulating to the higher forms of unselfish social service.

"We shall continue to teach the vocational subjects. We shall still need the technical and trade schools. But the ideal ends to be gained must be changed. The vocational courses should have some time for literature, history, sociology, art, and ethics. The lawyer, doctor, engineer, and tradesman all need these as much as they do the technical branches. The great problems of the world which demand immediate solution, if our civilization is to endure, are not primarily questions demanding technical skill, but are social and moral questions. There is skill enough, scientific knowledge enough, available if there were only courage enough, honesty enough and unselfishness enough in applying the knowledge. No one of them demands any great amount of shrewdness or technical skill. A STRICT APPLICATION OF THE TEN COMMANDMENTS WOULD SOLVE ALMOST EVERY REALLY GREAT QUESTION CONFRONTING THE WORLD."

Some newspapers are treating seriously the sayings of another "celebrated psychologist" who claims that:

"There are no mental or moral differences between children at birth."

and that

"Likes and dislikes, courage and timidity, a mild or a violent temper, are all absent from the child nature when it is born."

Osteopaths Now Recognized by the Industrial Accident Commission—Under the terms of a recent ruling by the Industrial Accident Commission of California, osteopaths now have precisely the same rights and privileges as do doctors of medicine.

William Lyman Phelps Points a Moral—The most amusing French comedy now running in Paris is "Knock" (pronounce the initial "K") or, "Le Triomphe de la Medecine," written by Jules Romains. This is a delightful satire on physicians, on patients, and on humanity. Young Doctor Knock is just the opposite of Monsieur Coue. Coue endeavors to persuade sick people that they are well; Knock persuades well people that they are sick, a much easier task. He enters a village where illness is practically unknown, but he soon has all the inhabitants in a sanatorium, by the simple process of beginning with *free examinations*. He shows his visitor a chart: "This is the way your liver ought to look," whereupon he exhibits another and most horrible chart; "and this is the way your liver really does look." Diagnoses take place on the stage; and the various village types that enter the doctor's office are amazingly well done. Those who come to scoff depart in terror, with a long list of medicines, appointments, and bills in store for them.—Scribner's.

Doctor! How Could You!—The patients of "Doctor" —— appeared to be getting quite a "kick" out of "sun baths" taken in the nude plus a few shocks of electricity, until Mr. Carter of the Board of Medical Examiners took a "look see" at the SANITARIUM (?).

The Osteopathic Bloc in Women's Clubs—Like all great organizations, women's clubs have to deal with organized groups—blocs—within their own organization. The newly formed Osteopathic Women's Association now beginning to function in California, said to be devised to "promote the welfare of women and children," gives promise of interesting developments.

Is This the Result of "Health Education"—People who now use tobacco have been widely, expensively, and intensively "educated" from earliest childhood about the alleged iniquitous influences of tobacco upon health.

Is it in consequence of this "education" or in spite of it that the consumption of tobacco has increased fourfold in the last two decades? We are now consuming, according to official government figures, 63,000,000,000 cigarets annually, and the consumption is increasing in direct ratio to propaganda for suppression of the "vice" (?).

"Health education is great stuff."

California Board of Health Endorses Birth Control—Doctor Dickie, executive officer of the California Board of Health, is widely quoted in the public press as saying that:

"Fifty per cent of infant deaths may be attributed to congenital debility, malformation, premature birth, injury at birth, and other causes which are the consequence of unfit mating. Until such time as we may be able to control the growth of our population, infants will continue to die from congenital diseases. The health department can do little to reduce these cases. It is a problem in eugenics."

This statement will be discouraging to "prenatal hygienists," Sheppard-Towner "obstetricians," "health centers," "clinics," and other agencies who claim to be making such rapid progress in promoting "positive health."

A Severe Arraignment—American civilization is commonly regarded as essentially materialistic. It is said of us that we have contributed little or nothing to philosophy and to religion. Our symbolic products are Ford cars and standard plumbing fixtures. . . . And yet no people of modern times have struggled so poignantly to find spiritual expression. The evidence to this is ample, but unrecognized. That Americans are churchgoers and, in a large measure, members of the various orthodox Christian churches, everyone knows. But outside the orthodox ranks there are thousands, even millions groping toward God—struggling to relate themselves to the Infinite in some way that is satisfying to them. Out of these struggles have arisen the many new religions of America.—Jules Bois (The Forum).

Hospital Costs—This is the season for the publication of hospital reports for the year 1924. Most good hospitals report that the cost of service was a little higher for 1924 than it was for 1923. California *State* hospitals claim to be exceptions, and, according to press notices, they have decreased their costs.

There are two methods by which such reports can be made, and neither is anything to be proud of.

Are Chinese Herbalogists Above the Law?—Cali-

fornia law provides in effect that no one shall diagnose or treat, or hold himself out to diagnose or treat, infirmities of humankind without license from the appropriate state authorities. Every day, in the newspapers of California, Chinese herbalogists advertise and ask patients to come to them for "scientific diagnosis and for treatment by Chinese herbs, guaranteeing remarkable results, etc." There can be no question of doubt but that these herbalogists are violating state law in the claims they make in the advertisement published in the newspapers. There is no reasonable doubt but that they are also violating the law in practicing what they offer to practice in their advertisements.

We ask again, are they above the law and if so, why?

We are going pretty strong when we allow illegal practitioners of medicine to advertise publicly their illegal wares. We are informed by the Board of Medical Examiners, whose duty it is to prosecute these law violators, that punishments are too hard to secure. The reasons why this is so are whispered around and gossiped about wherever citizens gather. There is nothing mysterious about it, and CALIFORNIA AND WESTERN MEDICINE is very much disposed to put the whole truth regarding some of the instances into bold-faced type for the world to read. We hereby cordially invite the Board of Medical Examiners to supply us with the FACTS, and we will publish them regardless of consequences.

Unfortunate Publicity—The past few weeks have been merry ones in the exploitation of scientific work and scientific workers in the news columns. We feel sure that Doctor Herbert M. Evans and Doctor Martha R. Jones regret as much as do their friends the news slants given to their serious studies of serious subjects.

"He Who Breaks a Beehive Will Lick His Hand"—George W. Pratt (Survey) uses the statements and conclusions made in that glaringly misleading "Survey" of San Francisco's Health Condition made by Haven Emerson, in an attack upon the physicians and other health-serving people of the city. Pratt reiterates Emerson's untruthful statements that:

"Practically nothing is spent for health education (in San Francisco), hardly anything is done for mental hygiene; there are practically no visiting nurses for the bedside care of the sick. Hospital and dispensary services are reported as fairly adequate in quantity, *but are submitted to much criticism as to quality.* **One wonders whether adequate educational forces exist to develop the higher standards in hospitals and dispensaries, and in social and health services, that are suggested at many points by this survey."**

Members of our medical organizations; some of our good hospitals, and many of our physicians who are just as well prepared and just as well known in *scientific circles* as these self-appointed critics resent imputations like the above that are given wide publicity. If the Emersons and Pratts will actually show some peculiarly creditable results in health improvement *in their home towns,* we will be glad to adopt them and equally pleased to credit them with the original discovery. In the meantime, why not omit some of the blah-blah?

Hospitals Secure Advertising Through Society Columns of Newspapers—The cheap and unethical custom of certain small town hospitals to secure advertising for themselves and the doctors by featuring their patients and their illnesses in the local newspapers is too reprehensible to discuss in temperate language. Marked copies of newspapers carrying this disgusting form of advertising are numerous in the editor's mail. Some of these papers are accompanied by notes of protest apparently from the patients. There are effective methods of stopping these violations of good taste and ethics, and they ought to be utilized.

The present-day mocking appeal to an infant that he give expression to himself represents the abdication of education. This appeal might just as well be directed to a physical vacuum. To starve youth by depriving it of intellectual and moral nourishment, and to cripple and disable it by depriving it of the discipline of experience, are among the newest and most popular forms of cruelty that have been devised to make education impossible. The results are apparent on every hand.—Nicholas Murray Butler, President Columbia University.

Disease Still Increasing—Some years ago, the American Association for Labor Legislation compiled the following startling estimations based upon the occupied males and females in the United States at that time:

Estimated number of cases of sickness among persons exposed to risks, thirteen and one-half millions.

Estimated social and economic cost of sickness per annum, a billion dollars.

Estimated number of days of sickness per annum, two hundred twenty-five millions.

"Full Time" School Physicians—The public school authorities in New York are employing "full time" doctors at $1000 a year to look after the health of school children. They also have "full time" "nurses, health teachers and other experts," but they pay these more than they do their doctors.

They call attention in print to this "progress" as something to be proud of.

Physicians Attacked for Not Giving—A Community Chest speaker at a recent Community Chest luncheon in San Francisco drastically criticized the doctors, among others of the "semi-rich" or "great middle class," for not "coming across" with more money for the "chest." Newspapers quote the speaker as saying:

"It is the big class of professional and semi-rich. It is the lawyers, doctors, dentists and other professional men who send their office assistants out to talk to those who are devoting their time to collect the funds needed to adequately care for San Francisco's needy.

"We should shame these people into giving. If they knew that a list of those subscribing was to be published, they would feel obligated to come across. I become blind with rage when I know the needless obstacles our workers are meeting."

The reaction against this tirade was prompt, widely spread, and the end is not yet. As has been repeatedly published, the doctors of San Francisco and elsewhere as well, give to charity in *service,* figured as nominal value, every year more than the entire collections of the Community Chest. Doctors don't want any special commendation for such helpfulness. It is part of every day's work with every one of them; but they do resent deeply and widely ill-advised criticsm of the kind mentioned.

One of the most prominent and most beloved physicians in the city informs us that on the very day that doctors were being publicly attacked at this chest luncheon, he saw nine poor patients in his office, and performed major operations upon two persons, none of whom would ever receive a bill for either medical or hospital services. Incidentally, the hospital thus giving its charity is one dismissed by that notorious Haven Emerson "survey" for the Community Chest as "commercial" and, therefore, by implication beyond the pale. According to the statements of certified public accountants, that hospital rendered free service to the poor last year that cost them over $75,000 to give. Other similar stories of individual and group interests in the welfare of dependent citizens could be told and verified—but what's the use?

The constantly increasing difficulties of raising sufficient funds to carry forward the program of the Community Chest is, of course, apparent to all. The chief reasons ought to be equally apparent to any competent observer. The dangerous tendencies and the reasons therefor should be fairly evaluated, and the policies and methods of the fundamentally fine principle of uniformity in collecting and allocating charitable funds and services be revised accordingly.

Free Birth Control Health Centers Halted—Just when the free "clinics" and "health centers" devoted to "birth control" get well started, the courts of Illinois take all the joy out of "careless love" by declaring these "free health centers" as illegal because they are practicing medicine without a license.

California Medical Association

GRANVILLE MacGOWAN, M. D., Los Angeles..President
EDWARD N. EWER, M. D., Oakland.....President-elect
EMMA W. POPE, M. D., San Francisco.....
.....Secretary and Associate Editor for California

THE ANNUAL SESSION, C. M. A., YOSEMITE, MAY 18-21, 1925

To the average person unfamiliar with the mountains, the term "cabin resort" conjures up some dreadful vision of sleeping on the ground and eating from a tin plate. Let it be said here, for the benefit of those who will attend the 1925 convention of the Medical Society of the State of California in Yosemite National Park, May 18-21, that such a trip involves no hardship or sacrifice of comfort.

"Why, it isn't like the mountains at all," exclaimed one woman from the East, a guest at Yosemite Lodge, when she learned that she could have her breakfast, piping-hot, served at her bedside any morning that she desired to give the order.

Such a comment was not intended to mean that the noble cliffs and waterfalls of Yosemite Valley had been ruined by the erection of buildings out of keeping with the natural surroundings; rather it was a spontaneous compliment to service rendered at the Lodge, fifteen miles from a railroad, service that measured up to standards of city hotels and far exceeded what the visitor had found at mountain resorts in other sections.

Yosemite Lodge is a little city in itself. "A charming colony of redwood cabins under the pines at the foot of Yosemite Falls, the cabins being grouped around a community center of office, dining room, lounge, writing-room, dance pavilion, theater, swimming pool, children's playground, and nightly campfire," is the description usually given of it.

The Lodge has its own postoffice, the name of which is Yosemite Lodge, California, and mail so addressed is delivered direct from trains without the delay of going through the main office in the village, the name of which is Yosemite National Park, California. The Lodge otherwise has its own telegraph station, Yosemite Lodge, California, and long distance telephone facilities. Baggage can be checked straight through to Yosemite Lodge.

In the American Plan dining-room of the Lodge, there is individual service for each guest. The dining-room linen is snowy white, and waitresses and bus boys are uniformed in white.

The other public rooms and broad verandas of the Lodge main group need no special mention, but a word should be said here about the services in the swimming pool group, just across the plaza. The pool is 120 feet long, filled with crystal mountain water which is heated to a comfortable temperature by steam. Suits can be rented. After a plunge, there is a barber ready to serve the men, a beauty parlor with all modern equipment for hairdressing, facial treatment, and manicuring for the women. The laundry, in the same group, offers high-class service, including the cleaning and pressing of clothing.

Every evening there is an entertainment of merit at the Lodge free to all guests. Every evening except Sunday there is dancing to the music of an excellent orchestra.

A word also should be said about the "cabins" which make up the Lodge's living quarters. Three types of cabins are provided.

The first type is built of redwood in rustic style that harmonizes with the tall pines and spruces around. A generous porch gives entrance to a bedroom with twin beds and other furniture of special design and finish. Dressing room, closet or wardrobe provides ample space for hanging up clothes. The bathroom includes tub, washbasin, and sanitary flush toilet of spotless porcelain; in a few of the cabins there are shower baths. Many of these cabins also have screened and curtained sleeping-porches on the rear. Electric stoves furnish heat at a turn of the button. American Plan rate, $8.50 per day per person.

Redwood cabins without bath make up the second group. Like the cabins with bath, they are furnished with twin beds. Bowls and pitchers are provided, and small stoves burning fragrant cedar or pine wood are used for heating. American Plan rate, $6 per day per person.

Canvas cabins form the third group—and do not confuse the Lodge's canvas cabins with tents. Canvas cabins here are all that the name implies—houses with canvas for walls. They are floored, have electric lights, a screened door, and six screened windows with awnings and curtains. Furnishings are similar to those in the redwood cabins without baths. European Plan rate (lodging only) $1.50 and $2 per day per person. American Plan rate (with meals in Lodge dining-room), $6 per day per person.

Maid service in all cabins assures plenty of towels and, in the cabins without bath, fresh water also. Hot water for the morning toilet may be had without extra charge by those living in cabins without baths, by leaving number of cabin and hour desired at the office of the Lodge.

YOSEMITE LODGE RATES

Yosemite Lodge is a colony of redwood cabins and canvas cabins in the pine woods, with central group buildings, including dining-room, office, lounge, writing-room, swimming pool, tennis courts, laundry, children's playgrounds, etc.

Redwood cabins with bath have front porch, living-room with twin beds, and many have in addition screened sleeping-porch with twin beds. Redwood cabins without private bath have living and sleeping compartments and twin beds. Canvas cabins have twin beds, are electric lighted, and have windows.

Redwood cabin, with bath, three or more persons in a single cabin, or half of a double cabin, per person per day, American Plan $8.00

Redwood cabin, with bath, two persons in a single cabin, or half of a double cabin, per person per day, American Plan..... $8.50

Redwood or canvas cabin, without bath, two persons in cabin, per person per day, American Plan..... $6.00

Canvas cabin, without bath, two or more persons in cabin, LODGING ONLY, European Plan, per person per day....$2.00

European Plan guests will be served meals in cafeteria. Tub and shower baths in detached rooms..... 50c

Send all reservations direct to L. H. Marks, assistant to general manager, Yosemite Lodge, Yosemite National Park, California.

TRAIN SERVICE AND FARES TO YOSEMITE LODGE

From San Francisco, Oakland, Berkeley, and Alameda to Yosemite Valley and Return

Tickets good leaving starting place on a Friday, Saturday, or Sunday only, $20.25. Return limit, 16 days.

Tickets good leaving any day, $21.75. Return limit, 90 days.

From Los Angeles to Yosemite Valley and Return

Tickets good leaving starting place on a Friday, Saturday, or Sunday only, $29.75. Return limit, 16 days.

Tickets good leaving any day, $33. Return limit, 90 days.

From San Francisco, the train service will be as follows:

Southern Pacific, No. 84
Lv. San Francisco, 8.40 a. m. Ar. Merced, 1:15 p. m.
Santa Fe, No. 22
Lv. San Francisco, 9 a. m. Ar. Merced, 1:25 p. m.
Southern Pacific, No. 50
Lv. San Francisco, 3:40 p. m. Ar. Merced, 8:55 p. m.
Santa Fe, No. 42
Lv. San Francisco, 5:15 p. m. Ar. Merced, 9:48 p. m.
Santa Fe, No. 2
Lv. San Francisco, 11 p. m. Ar. Merced, 3:40 a. m.
Southern Pacific, No. 86
Lv. San Francisco, 11:40 p. m. Ar. Merced, 5:35 a. m.
Southern Pacific, No. 84
Lv. Merced, 1:40 p. m. Ar. Yosemite, 7:15 p. m.
Santa Fe, No. 22
Lv. Merced, 1:50 p. m. Ar. Yosemite, 7:15 p. m.
Southern Pacific, No. 50
Lv. Merced, 8 a. m. Ar. Yosemite, 1:15 p. m.

Notes—

Southern Pacific train No. 84 carries diner.
Santa Fe train No. 22 carries diner and parlor car.
Southern Pacific train No. 50 carries diner.
Santa Fe train No. 42 carries diner and parlor car.
Southern Pacific train No. 86 and Santa Fe train No. 2 carry standard Pullman sleepers to Merced. Sleepers are detached at Merced. Occupants will not be obliged to vacate until just time enough to get their breakfast and depart from Merced on Yosemite Valley railroad at 8 a. m.

From Los Angeles, the train service will be as follows:

Southern Pacific Train No. 59
Lv. Los Angeles, 6:15 p. m. Ar. Merced, 5:35 a. m.
Lv. Merced, 8 a. m. Ar. Yosemite, 1:15 p. m.

Note—

Southern Pacific train No. 59 carries standard sleeper to Merced. Sleeper is detached at Merced. Occupants will not be obliged to vacate until just time enough to get their breakfast and depart from Merced on Yosemite Valley railroad train at 8 a. m.

Pullman Rates—

San Francisco to Merced:
Parlor-car seat, $1.05; lower berth, $3; upper berth, $2.40; drawing-room, $10.50.

Los Angeles to Merced:
Lower berth, $3.75; upper berth, $3; drawing-room, $13.50.

ATLANTIC CITY

Train information for members who plan to attend the A. M. A. meeting at Atlantic City from May 25-29.

Southern Pacific "Overland Limited"
Lv. San Francisco, 11 a. m., May 22. Ar. Chicago, 8:55 a. m., May 25.
Pennsylvania "Broadway Limited"
Lv. Chicago, 12:40 p. m., May 25. Ar. No. Philadelphia, 7:54 a. m., May 26.
Pennsylvania
Lv. No. Philadelphia, 9:56 a. m., May 26. Ar. Atlantic City, 11:05 a. m., May 26.

Lower berth, San Francisco to Chicago	$23.63
Upper berth, San Francisco to Chicago	18.90
Compartment, San Francisco to Chicago	66.75
Drawing-room, San Francisco to Chicago	84.00
Lower berth, Chicago to Philadelphia	8.25
Upper berth, Chicago to Philadelphia	6.60
Compartment, Chicago to Philadelphia	23.25
Drawing-room, Chicago to Philadelphia	30.00

Extra fare, Broadway Limited, $8.40.

One-way fare to New York via Atlantic City is $108.90.

Summer rates commence May 22. Round trip to New York via Atlantic City is $151.15.

Delegates, alternates, Fellows, and members of A. M. A. are entitled to one and a half regular rate.

Should a party plan to leave on a given date, reservation for a special car can be made.

The above schedule gives the shortest time between San Francisco and Atlantic City. Many other trains are available.

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ALAMEDA COUNTY

Alameda County Medical Association (reported by Pauline S. Nusbaumer, secretary)—The regular meeting of the Alameda County Medical Association was held January 19, H. B. Mehrmann presiding. After the reading of the minutes the program arranged by G. G. Reinle, consisting of a case report and a symposium on diseases of the urinary tract, was presented.

In his case report, W. B. Palamountain gave a brief review of bilharzia, and described the symptoms of a man extending over a period of twelve years before a diagnosis of bilharziosis was made. The case cleared up completely following some twelve injections of tartar emetic.

In the first paper of the symposium, "Kidney Function and its Relation to Nephritis," S. V. Irwin gave a brief outline of our present views on the anatomy and physiology of the kidney, after which some of the various theories concerning the process of urine production were discussed. The bearing of some of these facts upon kidney function and their relation to kidney function tests was then taken up with a review of the newer work of Richards on glomerular secretion, with a discussion of the practical application of this newer work.

Gertrude Moore, in her paper, "The Pathologic Kidney and Its Function," briefly reviewed the pathology of the kidney and discussed kidney function tests, the conclusion being reached that no single test could be relied upon, it being necessary to study both the retention products and the excreting power of the damaged kidney before surgical procedure.

In his paper, "Management of Prostatic Obstruction," G. G. Reinle said that the mortality rate for the operation of prostatectomy is: For the occasional surgeon, 25 per cent; for surgeons of all classes combined, 15 per cent; for surgeons using all known precautions, 3 per cent minus. He stated that the 15 per cent would be materially reduced by adequate preparation and post-operative care. The speaker thought it was merely a matter of individual preference as to whether an operator employed the supra-pubic or the perineal method of enucleation, though giving personal preference to the supra-pubic route.

It was pointed out that all prostatic obstructions do not require enucleation of the gland, and the other proper surgical methods of relief were discussed.

A full discussion of these papers was participated in by Thomas Addis (by invitation) of the Department of Medicine of Standford University, W. S. Kuder, Mark L. Emerson, and others.

After the transaction of business the meeting adjourned to the lower hall, where refreshments were served and an hour of good fellowship enjoyed.

Fabiola Hospital Association—At the annual meeting of Fabiola Hospital Association the officers and directors re-elected were: Mrs. J. H. P. Dunn, president; Mrs. Wallace Everson, first vice-president; Mrs. J. H. Knowles, second vice-president and financial secretary; Mrs. Allen D. Wilson, third vice-president; Mrs. D. E. Easterbrook, recording secretary; Mrs. Q. A. Chase, treasurer; Mrs. James G. Allen, assistant treasurer; Mrs. John Shuey, corresponding secretary. Directors: Mrs. H. C. Taft, Mrs. E. A. Whitaker, and Mrs. Violet Whitney.

A gift of $5000 was presented to the hospital by Mrs.

Carlotta Carson Tyson in memory of her parents, William and Sarah Carson. Dr. Daniel Crosby obtained a free laboratory fund of $500 for the hospital, while Dr. W. L. Bell donated one of his fracture tables to the institution.

During the past year 694 children were treated with 730 days' free care, and 513 patients received medical care free of charge, which cost the hospital $12,107.43. The yearly report of the treasurer of the hospital showed disbursements to the amount of $428,712.94.

One of the official reports read, in part, follows:

"Many young women from all parts of the state are applying for admission to our school for nurses, but we are unable to accept all of them as our nurses' home is filled to capacity.

"Children to be restored to health and happiness always make the greatest appeal, and every effort is being made toward that end.

"The new maternity unit has been busy beyond all expectations. A total of 1101 babies were welcomed last year, and included in that number were twelve sets of twins.

"Another year has passed into the history of this institution—the forty-eighth, a year that may be considered the banner year of its existence, in point of service and development. May we be given the power to press on to still greater achievement for our blessed Fabiola."

Dr. L. H. Buteau Heads Society of Surgeons—Dr. S. H. Buteau is president of the Surgeons' Society of Oakland, which was organized recently. C. A. Dukes is vice-president and E. Spence DePuy is secretary-treasurer.

The purpose of the society, as described by O. D. Hamlin, chief of staff of Providence Hospital, is to discuss for mutual benefit the latest advances in surgery technique through the reading and discussion of papers on the subject, and the exchange of papers with similar societies in Eastern cities.

Eighteen local surgeons are enrolled in the society. A committee is now at work preparing a constitution and by-laws.

CONTRA COSTA COUNTY

Contra Costa County Medical Society (reported by L. St. John Hely, secretary)—The regular monthly meeting of the Contra Costa County Medical Society was held at the offices of F. L. Horne at Crockett on the night of January 31.

An illustrated lantern slide lecture was given by Nathan G. Hale of Sacramento on the pathology in general of the kidneys and ureters. Special attention was given to obstruction and blocking of the ureters. Great care and work was shown in the preparation and subject matter of the slides.

The following members and friends were present at the meeting, and gathered at the hotel for refreshment afterward: John Beard, Martinez; Denninger-Keser, Richmond; J. Emmett Clark, Walnut Creek; F. L. Horne, Crockett; Nathan G. Hale, Sacramento; William A. Rowell, Crockett; Rosa A. Powell, Richmond; Elizabeth Redmond, R. N.; L. St. John Hely, Richmond.

FRESNO COUNTY

Fresno County Medical Society (reported by T. Floyd Bell, secretary)—Two special meetings of the Fresno County Medical Society were held January 17; a noon luncheon at the Hotel Fresno; and a meeting in the evening at the General Hospital of Fresno.

Those present were: Aller, Anderson, Bell, Binkley, Couey, Cross, Craycroft, Diederich, Ellsworth, Goldberg, Jones, Jorgensen, Lamkin, S. M. Long, Manson, Mathewson, Miller, Montgomery, Mitchell, Mordoff, Morgan, Millholland, McPheeters, Pettis, Pomeroy, Pisor, Schottstaedt, Sheldon, Staniford, Stein, Scarboro, Tillman, Tobin, Trowbridge, Tupper, G. W. Walker, and Willson. Visitors: Drs. George Piness, E. R. Lewis, Hyman, Miller, Dau, and Mr. Alles.

At the noon luncheon George Piness of Los Angeles presented a very interesting and instructive discussion on "Allergy." He spoke of allergy in general, and also in relation to such specific conditions as eczema, migraine, angioneurotic edema, urticaria, abdominal allergy, and so-called "arthritis" due to allergy.

Three papers were read on hay-fever and asthma at the evening meeting.

Dr. Hyman Miller of Los Angeles discussed protein sensitization and anaphylaxis. He described and illustrated the skin tests as he uses them. He emphasized the absolute specificity of protein reactions and the necessity of testing with the exact type of protein to which the patient is exposed. He insists that there is no doubtful reaction in the skin test. Any reaction showing pseudopodia like the extensions from the central wheel are to be regarded as positive. All others must be considered negative. Miller discussed the lung findings in his cases of fatal anaphylaxis and in severe asthma.

Mr. Gordon Alles read a paper on the chemical aspects of anaphylaxis and allergy.

George Piness gave the principal address of the evening on clinical aspects of allergy. He described the method of complete examination of patients sometimes extending over a period of years, the histories taken, the laboratory tests, the studies made of the patient's surroundings and habits. A number of very interesting cases were cited in which a distinctly local protein was responsible for the trouble. Methods of treatment, both palliative and specific, were given.

The regular meeting of the Fresno County Medical Society was held February 3 at the nurses' home of the General Hospital.

There were thirty-four members and eighteen visitors present. Members: Aller, Anderson, Bell, Barr, Couey, H. O. Collins, Deiderich, Dearborn, Dahlgren, Ellsworth, Goldberg, James Jorgensen, Kjaerbye, Larson, Manson, Maupin, Miller, Morgan, Nedry, Nider, Peterson, Pettis, Ransom, C. A. Robinson, Schottstaedt, Sciaroni, Stein, Scarboro, Tillman, Tupper, J. R. Walker, Webster, Weddle, and Wiese.

Drs. H. Robertson and N. J. Dau were unanimously elected regular members.

The board of censors and the state secretary having reported favorably on the application of Dr. H. O. Collins for associate membership, he was unanimously elected.

President Anderson announced the standing committees for this year, as follows:

Program Committee—Madden, Barrett, and Manson.

Board of Censors—Morgan, Pomeroy, and Wiese.

Committee on Ethics—Tupper, James, and J. R. Walker.

A communication from the Gorgas Memorial Institute of Tropical and Preventive Medicine was read and ordered laid on table.

A letter from Dr. O. W. Steinwand was read, thanking the society for conferring upon him honorary membership.

A communication was read from Dr. Ellen Stadtmuller, director Bureau of Child Hygiene California State Board of Health, in regard to examination of children entering school for the first time. Dr. Morgan moved, Dr. Madden seconded, that the board of governors work out a plan for caring for this matter. Carried.

J. R. Walker spoke briefly against the practice of consulting and working with any members of cults in treating patients.

Emmet Rixford, Professor of Surgery Stanford Medical School, gave a very interesting and instructive lecture on "The Mechanics and Production of Fractures, With Special Reference to Spiral Fractures of Long Bones." Dr. Rixford is especially capable of dealing authoritatively on this subject, as he received an academic education in mechanical engineering. He dwelt at some length on the mechanical results of traction and twisting of various materials. He showed how these same principles applied to fractures, especially the spiral fractures of long bones. He showed his personal treatment of these spiral fractures, how easily the fragments could be held in position by open reduction. While the talk was highly technical, yet it was very logical and in the end simple.

A buffet luncheon was served after the meeting.

The annual meeting of the staff of the General Hospital of Fresno County was held January 13 at the Sequoia Club at dinner. There was a good attendance. Dr. Frank Tillman acted as toastmaster of the evening.

A communication from Director H. O. Collins was read.

Frank Curtin, a local attorney, gave a very humorous talk entitled, "Glass Eyes I Have Known."

The following officers were elected for the ensuing year: President, Thomas F. Madden; vice-president, Guy Manson; secretary-treasurer, Charles A. James.

Annual Report (presented by T. Floyd Bell, secretary, December 31, 1924)—The regular and two special meetings of the Fresno County Society were held during the year 1924, with a total attendance of 413, or an average of 34.4 members to each meeting. The two special meetings were noon luncheons, started in November, which have proven popular with the men. Scientific programs were given at all the meetings except one—a get-together meeting on December 2.

One year ago the secretary reported 118 active and six honorary members. During the year seven members have been dropped for non-payment of dues: Drs. Brown, Hoare, Minas, Stammers, Steinwand, Flora W. Smith, T. D. Smith. Three new members paid for the year 1924: Drs. S. M. Long, H. M. McNeil, and G. C. Nedry. The total active members for 1924 were 114, and six honorary members. R. M. Jones was transferred to the Kern County Medical Society. A. B. McConnell was lost through death last August.

The following physicians were recently elected: G. K. Nider, R. W. Dahlgren, and C. B. Cowan. The application of O. P. Pisor having been passed on favorably by the state secretary, will be voted on January 6, 1925.

During the past year we have had many interesting programs presented to us by able men, most of them from medical centers. Those who attended the meetings know the merits of these scientific papers.

Early in the year a movement was started to re-establish our medical library, which is housed and taken care of by the Fresno County Library. Due to the generosity of several members, subscriptions to the various periodicals were renewed and some of the old files completed. It is hoped that a small amount of money will be expended each year to keep the files intact, as they will be invaluable as time goes on.

Noon luncheons held once a month bring about a better understanding among the members of our profession, and create firmer friendships and more constant and effective general co-operation between the men. Out-of-town men are urged to attend whenever possible.

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LOS ANGELES COUNTY

Hollywood Hospital Accredited by American Medical Association—The Hollywood Hospital has been placed on the list of hospitals accredited by the Council on Medical Education and Hospitals of the A. M. A. We welcome this new addition to the hospitals that are devoted exclusively to the promotion of scientific medicine.

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PLACER COUNTY

Placer County Medical Society (reported by Robert A. Peers, secretary)—The Placer County Medical Society held its February meeting at Auburn, Saturday evening, February 14. The following members and visitors were present: Members—Doctors H. N. Miner, L. B. Barnes, R. H. Eveleth, H. M. Kanner, C. E. Lewis, J. G. Mackay, R. F. Rooney, R. O. Schofield, G. H. Fay, R. A. Peers. Visitors—P. D. Barnes, R. N. Bramhall.

At the close of the regular business, R. N. Bramhall of Sacramento delivered an address on diabetes. Dr. Bramhall took up the history of the work done on the pancreas from the first pathological reports published in the late eighteenth century down to the recent work by Banting and Best. He described very fully and very clearly the physiology of digestion of carbohydrates, proteins, and fats, and explained the break in the normal physiology of digestion which resulted in a train of symptoms known as diabetes. He also outlined the chemistry of the blood and concluded with a resume of the present methods of treatment, both dietetic and by insulin, paying particular attention to the treatment of diabetic coma. After the address there was an informal discussion in which all the members took part.

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SACRAMENTO COUNTY

Sacramento Society for Medical Improvement (reported by Bert S. Thomas, secretary)—The January meeting of the Sacramento Society for Medical Improvement was held at the new Sutter Hospital. Thirty-five members attended. There were four visitors.

Presentation of Cases—Dr. Schoff presented two patients. The first was that of an epithelioma of the nose. The patient was presented to show the results of radium treatment. This patient had had three treatments in the last year. It demonstrated that the Prickle cell type keeps growing despite the treatment, the radium merely quieting it for a short time. The second patient showed a most diffuse psoriasis. He was shown to call attention to the marked likeness of the lesion to a papulo-squamous syphilid.

Dr. Rulison presented a five-pound degenerated myoma that had been removed at a transperitoneal Caesarean section for a full-term baby. The case had been seen at the third month and had raised a question as to the possibility of a bicornuate uterus.

Dr. Hale reviewed four cases of traumatic hematuria. One, of an upper pole rupture causing a capsular hematoma. This case required nephrectomy. The second, a hemorrhage from the kidney pelvis, was controlled by the introduction of a 3 per cent $AgNO_3$. The third bled from the veins immediately adjacent to the kidney pelvis. Here a hematoma was removed and an iodoform pack controlled the hemorrhage. The last was of a buckshot lesion of both kidney and ureter. This was controlled by transfusion plus the introduction of a ureteral catheter, which was left in place for three days. Dr. Snyder remarked about the interesting fact of being able to obtain the rare Type 1 donor for this last case, who was also a Type 1.

Dr. J. Roy Jones presented a most interesting paper. His subject was "Nasal Headaches." He stressed the supreme importance of the nasal sinuses in connection with his subject. Despite the goodly supply of blood vessels and lymphatics, the nerves are the 100 per cent offenders in the distribution of the distress. Special attention was directed to the great ramification of the fifth nerve in this regard. As direct causes, toxemia and pressure were shown to be of first consideration. The latter manifests itself by first, pressure on points impinging on the sinuses; second, by malposition of structure; third, pressure by congestion within the sinuses; fourth, pressure due to pus; and lastly, by negative pressure, i. e.: that due to a blocked outlet. This usually occurs in the frontals and ethmoids. All the above causes may be precipitated by acute coryza. Here all the elements of the blood are found in the cavities by transudation. These, in turn, become infected. Extra body strain, abuse of alcohol, indigestion, and constipation, all exaggerate the picture. Though most writers suggest that the headache itself is not caused by the peripheral irritation, Jones takes issue with this statement.

Under treatment of the conditions causing "nasal headaches," Jones discussed the palliative treatment by inhalations. This may be used diagnostically. If relief is thus afforded, it most surely points to accessory sinuses or their adjacent orifices as involved. This is particularly effective when thickened secretions enter the picture.

In the discussion, George Briggs differentiated between the suppurative and non-suppurative type. He pointed to the narrowed nose, giving turbinate pressure and blocked openings, as an important factor. McKee suggested that practically all sinus infections are associated with some deformity, and called attention to the fact that immediate treatment of numerous childhood injuries would obviate a good many later difficulties. He also complimented the orthodontists on their good work in preventing these later conditions. Turner considered irritation of a recently discovered portion of Nerve 1, called the terminal nerve, to be an important factor; also, ostealgias about the nerve openings.

Dr. Miller discussed Ewings' sign. Harris inquired of the value of chlorine gas in treatment. Jones stated that he believes chlorine gas treatment of these conditions will not be successful.

The board of directors reported the election of F. N. Scatena as president and W. W. Cress as vice-president. A program committee, consisting of Drysdale and Dunlap, was appointed.

Communications were read from Dr. Dickie, inquiring

as to the local status of endemic goiter, and from Hartley Peart, regarding group insurance.

Resolutions to perpetuate the memory of Doctor James were prepared by Drs. Simmons and Hall, and ordered spread upon the minutes.

Dr. Parkinson called attention to the fact that the magazine BETTER HEALTH was being placed on a self-supporting basis.

Immediately after adjournment, a real surprise was in store. Dr. June Harris presented a most beautiful piece of statuary to Dr. W. H. Beattie. The piece is entitled "Maternity" and depicts a mother with two babies. The mother is fondling one, and there is an appeal from the other, now much older, to be fondled. This beautiful work of art was exhibited by the kindness of Mrs. Spreckels at the Panama-Pacific International Exposition, and was to be placed in the De Young collection until Dr. Harris was fortunate enough to obtain it for presentation to Dr. Beattie. The piece will be given a prominent place in the Sutter Hospital.

Local Notes—Dr. Thom, recently on the x-ray staff of the University of California Hospital, is established here with Dr. Zimmerman.

Dr. Edward S. Babcock's many friends of the Bay region will be pleased to hear of the arrival of "Miss Phillis" on January 19.

The beautiful new Sisters' Hospital of 150 beds intends opening its doors on January 25.

The staff of Sutter Hospital has named E. T. Rulison chief, and James R. Snyder, assistant.

E. C. Turner has returned from European clinics and is established in his new offices for the practice of ear, nose, and throat work.

R. G. Scribner has affiliated with the local society. He comes from Hammonton.

SAN DIEGO COUNTY

San Diego County Society (reported by Robert Pollock, editor)—The recent meeting of the Southwest section of the American College of Surgeons was a most noteworthy affair. That talks on medicine can so attract the public as to draw 4000 people and turn away hundreds who could not be accommodated, is sufficiently unusual to be noteworthy in itself. The speakers at these public meetings are doing a valuable work; valuable not alone to the public, which needs to be better informed upon the ideals and human issues and contacts of scientific medicine, but valuable also to the members of the profession who are induced to think in terms of human interest and social tendencies, as well as in the daily grind of scientific thought. California and Southwest medicine owes a debt of gratitude to Dr. Franklin H. Martin and his aides, Drs. Craig and MacEachern, as well as to Dr. George W. Crile and Father Moulinier. The scientific sessions to which the medical profession as a whole were welcomed were distinctly stimulating, and brought together a distinguished gathering of the leaders in surgery in the Southwest, San Francisco, Los Angeles, and other California cities contributing liberally their quota. Among other things brought out was the fact that San Diego can boast fifteen Fellows of the college. San Diego's newer hospitals, all of which conducted clinics during the convention, were greatly admired by visiting surgeons.

Through the generosity of John D. Spreckels, one of San Diego's foremost citizens, Mercy Hospital will be enabled to add an extra wing, leading from the south of the main building, to balance the recently completed north wing. This wing, which is a memorial to the late Mrs. Spreckels, will add much to the beauty and symmetry of the whole.

The officers and committee members of the San Diego County Medical Society for 1925 are as follows: President, George B. Worthington; vice-president, T. F. Wier; secretary, C. O. Tanner; treasurer, W. O. Weiskotten; editor, Robert Pollock; associate editor, W. H. Geistweit, Jr.; librarian, Mrs. Mildred S. Farrow.

Delegates to State Society — Thomas O. Burger, two years (1924-5); Robert Pollock, two years (1924-5); Martha Welpton, 1925.

Alternates to State Society—M. C. Harding, two years (1924-5); L. H. Redelings, two years (1924-5); Lillian Mahan, 1925.

The County Medical Society has enjoyed some excellent programs at recent meetings, some of which are herewith mentioned: An illustrated lecture on "Non-Surgical Types of Backache," by P. B. Magnuson, M. D., of Chicago; A symposium on the treatment of tuberculosis with demonstration of artificial pneumothorax, and other features, furnished by the medical staff of Camp Kearny were very favorably received, upward of 100 members of the county society motoring out to the camp on the occasion of this annual treat.

It is of passing interest that the San Diego County Dental Society on January 15 centered its discussion around a paper on "Metabolism in Its Bearing Upon Dentistry," by Dr. Harvey Jackson, who is a member of both the medical and dental societies.

SAN FRANCISCO COUNTY

Meeting of the Eye, Ear, Nose, and Throat Section of the San Francisco County Medical Society, January 27, 1925—At the meeting of the Eye, Ear, Nose, and Throat section of the San Francisco County Medical Society on January 27, Dr. Pischel reported further progress in a most unusual case, the resume of which is as follows: A fine piece of copper from a dynamite-cap explosion lodged inside the eyeball on the ciliary body. The accident occurred twelve years ago. The eye at present shows copper deposits in the lens and glaucoma.

The foreign body was localized according to Sweet's improved eye localizer in the ciliary body 8 mm. below the center of the cornea, while localization with Dr. Pischel's markers (California State Journal Medicine, Vol. 18, October, 1920, p. 408) put it just inside of the sclera on the ciliary body.

December 16, 1924, a vertical incision through the sclera upon the foreign body was made; no foreign body was seen or felt. An extensive cyclodialysis was then added.

As the tension remained high, in spite of adrenalin injections, iridectomy upwards was performed December 19, 1924. A few days afterwards the patient went home. He reported January 6, eighteen days after the iridectomy. Tension was 30; eye pale, with the exception of the point of the incision, for the iridectomy under the upper lid, and there under the conjunctiva, was seen, with Zeiss Loup, a fine sharp-edged foreign body showing reddish reflex under the corneal microscope. The roentgen picture showed only this foreign body; none in the former location below the limbus. After slitting the conjunctiva, the foreign body was removed and proved to be a very fine piece of metal 1 mm. long.

How did the foreign body get there? Dr. Pischel's explanation is this: At the cyclodialysis the foreign body was pushed into the anterior chamber, and at the iridectomy it floated under the conjunctiva and became lodged there.

Franklin Hospital Staff Meeting (reported by Ewald H. Angerman, secretary)—The monthly staff meeting of the Franklin Hospital was held in the hospital on Friday, January 30, W. H. Heinzman presiding. Officers elected to serve for the ensuing term are: Chairman, Frank R. Dray; vice-chairman, Otto Westerfeld; secretary, Ewald H. Angerman.

The paper of the evening was ably presented by Irving S. Ingber, who chose for a subject, "Duodenal Diverticulitis," illustrated by appropriate lantern slides; also a presentation of case reports. The subject was discussed by Dray, Werner, and Yoell.

Southern Pacific General Hospital Clinical Meeting (reported by W. T. Cummins, secretary)—The monthly clinical meeting of the Southern Pacific General Hospital, San Francisco, was held in Huntington Hall, on Wednesday, February 4.

"Fulguration in Questionable Tumors of the Bladder," George L. Eaton. He spoke of the importance of this type of therapy and the careful following up of the patient, with subsequent diathermy every two or three weeks if necessary. Frequent lavage of the bladder with mercurochrom, nitrate of silver, or potassium permanganate is an essential. Fulguration in some instances has caused considerable fibrosis and contraction of the organ. He disclaimed any advantage attending the use of deep roentgen

therapy or radium. The paper was profusely illustrated with colored plates.

"Chronic Cholecystitis," James A. Guilfoil, who emphasized the importance of the pathological work done by Graham, Heyl, MacNeal, McCarthy, and others in promoting our knowledge of cholecystitis, its sequelae and treatment. He stated that cholecystitis is always accompanied by hepatitis, which may be primary or secondary, through extension by the lymphatics, and further extension may be productive of choledochitis and pancreatitis. A vicious circle may be established in the maintenance of two or more of these lesions. Owing to the position of the liver in the blood vascular system, it may be affected by infectious and toxic agents carried by the arterial and portal channels. It has been established that there is a relationship between gastric and duodenal ulcers and appendicitis, and cholecystitis, but there undoubtedly exists also a relationship between focal infections (teeth, tonsils, sinuses, rectum, and prostate) and cholecystitis, the infectious, toxic agents, or both being carried thereto by the blood stream. Many cases of hepatitis, with or without cholecystitis, will subside with appropriate measures directed toward the primary focus of infection, together with the establishment of a suitable diet.

"Roentgen Demonstration of Cholecystitis," Frederick H. Rodenbaugh. Roentgenologists have been much interested in extending the diagnostic field of the alimentary tract from organic to functional disturbances and the recognition of the fact that diseases of the biliary system produce profound disturbances of the gastro-intestinal functions, will be a great help in the diagnosis of these important diseases. Dr. Rodenbaugh also believes in the associated hepatic pathology and stated that the appreciation of the role played by focal infections in producing biliary-tract diseases might do much toward the treatment of these biliary disorders.

St. Joseph's Hospital Discusses Post-operative Complications—St. Joseph's Hospital staff, San Francisco, considered "Post-operative Complications" on February 11, A. S. Musante and W. T. Cummins presiding in turn. A. W. Hewlett spoke on "Medical Post-operative Therapy," summarized as follows:

The treatment of post-operative pneumonia has not altered in recent years. The various improvements suggested from time to time have later been discarded, so that we must still depend on the methods used twenty years ago. The advances in our knowledge of heart disease have a bearing on post-operative problems. Heart disease seldom is an absolute contra-indication to operation—rather it increases the hazard. If the operation is imperative, the chance must be taken. If the operation is one of choice, the increased hazard must be considered by the surgeon before he decides. Most serious are the signs of failing circulation—pronounced dyspnoea, distended veins, swollen liver, albuminuria, and edema. Of cardiac murmurs, the systolic in themselves can be disregarded, while the diastolic—whether of aortic insufficiency or of mitral stenosis—are always serious. Of irregularities, extrasystolies in themselves are inconsequential, but auricular fibrillation is more serious, and a preliminary course of rest and digitalis should be given if the heart rate is rapid. Chloroform should not be used if there is cardiac disease. The occasional sudden cardiac deaths in the early stages of anesthesia are due to ventricular fibrillation, which is more apt to occur when chloroform is used. In these overdoses epinephrin, intravenously, may be tried; also cardiac massage from beneath the diaphragm if the abdomen is opened.

Circulatory failure after operation is usually due to hemorrhage or shock. In either case not enough blood returns to the heart to enable this organ to maintain the circulation. Most important is the administration of large quantities of liquid. Salt solution by rectum or subcutaneously is required and, in case of emergency, intravenous injections of liquid. Gelatine, acacia, and glucose (10 per cent) solutions or whole blood may be used, but the reaction with chill is a disagreeable and sometimes dangerous sequel. Epinephrin is valuable, but transient. Tyramin hydrochloride in doses of 0.04-0.08 every 20 to 30 minutes will sometimes rescue an apparently hopeless case. Strychnine and camphor are useless. Caffeine is of doubtful value.

Cardiac failure is difficult to differentiate from shock. In some instances an abnormal rhythm, such as auricular flutter or fibrillation, calls for rapid administration of digitalis. Paroxysmal tachycardia may sometimes be checked by vagus pressure. As a rule, where cardiac failure is suspected, digitalis should be rapidly given. Intravenous injections are dangerous and are to be avoided. If no digitalis has been given previously, a dose corresponding to from 12 to 16 cc. of the tincture, according to weight, should be given immediately. Absorption from the rectum is as rapid as orally. Subcutaneous injections are effective, but painful. These large doses should not be repeated. They become effective in two to six hours. At present it is difficult to estimate the value of digitalis in post-operative circulatory failure, but our knowledge of the drug indicates that only large doses can be expected to be beneficial.

Dr. C. A. Walker spoke on "Post-operative Surgical Complications," abstracted below:

Careful attention to pre-operative, operative, and post-operative details will prevent or make one anticipate later complications. Complications may be immediate, intermediate, or remote; e. g., a hemorrhage almost immediately after an intestinal obstruction within one to two days or obstruction even months later from adhesions.

Post-operative Hemorrhage — Primary type begins at operation and continues for some time, suggesting a blood dyscrasia. Reactionary type appears often when consciousness is returning and may be due to a ligature slipping. Secondary type shows up later, often in wound infections and arteriosclerotics. Symptoms, according to rapidity and amount of bleeding, are a quick, short cry, rapid, weak pulse, subnormal temperature, air hunger, thirst, impending feeling, pale, clammy skin, restlessness, dilated pupils, and collapse. Treatment includes prophylaxis, checking bleeding and preventing its recurrence, and aiding recovery. Morphine and replacement of lost blood by transfusion of whole blood, or acacia, normal or hypertonic salt, gelatin (1 to 2 per cent in saline), and Hogan's solutions are used—cautiously with unligated vessel. Elevate the feet. After treatment for secondary anemia is needed. Locally, apply clamp and ligature and, if small or persisting bleeding, iodoform packs. Hot water, extreme cold, caustics, and thromboplastin may help. Slow oozes may be stopped by subcutaneous horse serum, coagulin and other coagulants.

Post-operative infections may remain localized, spread to contiguous parts or cause parotitis, empyema, septicemia, etc., and treatment must be accordingly. In gas bacillus and tetanus infections use free incisions and remove necrotic tissue. Anti-tetanic serum is potent.

Post-operative ileus and the more readily amenable and transitory pseudo-ileus must be differentiated. True ileus has septic and mechanical types—former from peritonitis and later from angulation of bowel. Ochsner treatment, overcoming of dehydration, gavage, establishment of fecal fistula are indicated for septic form and relief of obstruction and correction of cause in mechanical type, though palliative enterostomy may be best at first. Post-operative disruption of wound, sinuses, and fistulas are not uncommon and demand appropriate treatment.

Alex Keenan and P. Collischonn discussed the topic, and R. M. H. Berndt and William Quinn presented case histories, respectively of nephritis-carditis, with Cheyne-Stoke breathing long before death, and influenzal (pneumococcic) meningitis, lasting forty-five days.

The program for March 11, "Medical Economics Night," follows: "Approved Investments for Doctors," Percy A. Woods; "Best Methods of Handling Doctors' Accounts," Attorney J. F. Denman; and "The Doctor as a Better Business Man," C. A. Mariani.

The San Francisco Polyclinic—At the annual meeting held recently, President H. A. L. Ryfkogel announced that the clinic served 35,000 ambulatory patients free of charge during the last year.

SANTA BARBARA COUNTY

Santa Barbara County Medical Society (reported by Alex C. Soper Jr., secretary)—Thirty-four members, with the six house officers of the Cottage Hospital, Mr. Curtis the superintendent, Dr. Charles F. Mills, president of the San Luis Obispo Society, and Drs. B. E. Merrill and C. E.

Schultz of Santa Paula as guests, assembled at the Hotel Carrillo January 12 for the annual banquet.

Addresses were made by Drs. L. W. Hotchkiss, H. F. Pierce, Allen Williams, Franklin Nuzum, and Henry J. Ullmann, on various and sundry subjects, some of them serious, some of them humorous. Dr. Samuel Robinson, the president, held down the chair.

The banquet was succeeded by a series of moving picture scences taken by Dr. Ullmann, first of which was a procession of staff doctors leaving the Cottage Hospital, and second, a comic section devoted to the antics of "Felix the Cat." Drs. Robinson and Soper had also prepared some caricature of the idiosyncracies of certain members of the society, which, in the form of lantern slides made by Dr. Ullmann, were put upon the screen.

The election of officers for 1925 resulted in making Franklin Nuzum president; H. E. Henderson, vice-president; and E. D. Smith of Solvang and O. C. Jones of Lompoc, vice-presidents-at-large. The secretary-treasurer was re-elected. The election of delegates to the state convention was postponed, due to the late hour. No action was taken on the dues for the ensuing year.

Santa Barbara County Medical Society Meeting, February 9, 1925 (reported by Alex C. Soper Jr.)—This meeting was held at the Cottage Hospital, with President Nuzum presiding. Present, nineteen members, one interne, and Dr. Hagen of the house staff, as well as Dr. Allen, president of the County Dental Society.

Moved, seconded, and passed that the censors of the ensuing two years be appointed by the Chair. The president reserved action for consideration.

Moved, seconded, and passed that the annual dues be the same as in 1924, namely, $12 for both county and state.

Henry J. Ullmann was elected delegate for the state convention, with William J. Mellinger as alternate.

Communication regarding the Gorgas Memorial Fund was, by vote, laid on the table.

Letter from the State Board of Health regarding examination of school children reported, and the secretary instructed to reply. Another from the board, in re incidence of endemic goiter, to be answered in due time, after asking each member of the society, through question inserted in the notices of meetings. In this connection, W. D. Sansum reported briefly on evaporation—analysis of waters in the vicinity supplying the community, stating that the city supply gave fifteen parts; Montecito, 8000; and a private well 400 of iodine—according to work recently done at the hospital.

A letter from a member, calling attention to the frequent appearance of press reports of physicians giving lectures to the laity, and asking for a discussion of the subject, brought out considerable talk pro and con. The consensus of opinion was finally to take no action in the matter, since the state society emphasized the value of such lectures outweighing the advertising of quacks, if given by physicians of standing in the community, whose names necessarily added weight to their subject matter.

The paper of the evening was by Joseph D. Lewis, M. D., Santa Barbara, on "Neoplasms of the Larynx," illustrated with lantern slides. This long and interesting exposition was discussed thoroughly by Schurmeier, Freidell, Ullmann, Means, and Profant.

SONOMA COUNTY

Sonoma County Medical Society (reported by G. A. Hunt, secretary)—The first regular meeting of the year was held in the Hotel Petaluma, in Petaluma, January 8. Thirty members and four guests were present. A duck dinner preceded the regular meeting.

Doctor V. H. Podstata, superintendent of Livermore Sanitarium, gave an interesting and instructive address on "Psychotherapy and General Medicine." Few speakers have been more thoroughly appreciated than Doctor Podstata. It may be that doctors feel their need for psychotherapy as well as their patients.

NEW HEALTH OFFICERS APPOINTED

Ernest Dozier, M. D., of Redding has been appointed health officer of Shasta County, succeeding Sherman T. White, who has occupied the position for many years. Doctor Dozier is licensed to practice medicine in California, and is a member of the California Medical Association.

Alex M. Lesem, M. D., has been appointed city health officer of San Diego, succeeding George B. Worthington, M. D. Doctor Lesem is also county health officer for San Diego County. He is licensed to practice medicine in California, and is a member of the California Medical Association.

Carl P. Jones, M. D., health officer of Nevada County, has recently been appointed city health officer of Grass Valley, to succeed Paul D. Barnes, M. D. Doctor Jones is licensed to practice medicine in California, and is a member of the California Medical Association.

Alfred L. Phillips, M. D., has been appointed health officer of Santa Cruz County, to succeed W. H. Keck. Doctor Phillips is licensed to practice medicine in California, and is a member of the California Medical Association.

CHANGES IN MEMBERSHIP

Deaths

Bacon, Charles Evan. Died at Los Angeles, February 4, 1925. age 60. Graduate of Kansas City Medical College, 1890. Licensed in California in 1898. Doctor Bacon was formerly a member of the Los Angeles County Medical Society, the California Medical Association, and the American Medical Association.

Franklin, Berte Vosburgh. Died at San Diego, January 16, 1925, age 50. Graduate of the University of Southern California College of Medicine, Los Angeles, 1901. Licensed in California the same year. Doctor Franklin was a member of the San Diego County Medical Society, the California Medical Association, and the American Medical Association.

Harry, Charles Rees. Died at Stockton, February 6, 1925, age 62. Graduate of Cooper Medical College, San Francisco, 1890. Licensed in California the same year. Doctor Harry was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Nichols, Albertus Bentley. Died at Oakland, February, 1925, age 46. Graduate of the College of Physicians and Surgeons, Maryland, 1904. Licensed in California in 1921. Doctor Nichols was a member of the Alameda County Medical Society, the California Medical Association, and the American Medical Association.

Smith, Thomas Hardy. Died at Pomona, February 10, 1925, age 70. Graduate of the Washington University Medical School, St. Louis, 1882. Licensed in California in 1888. Doctor Smith was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

NORMAN BRIDGE, M. D.

1844-1925

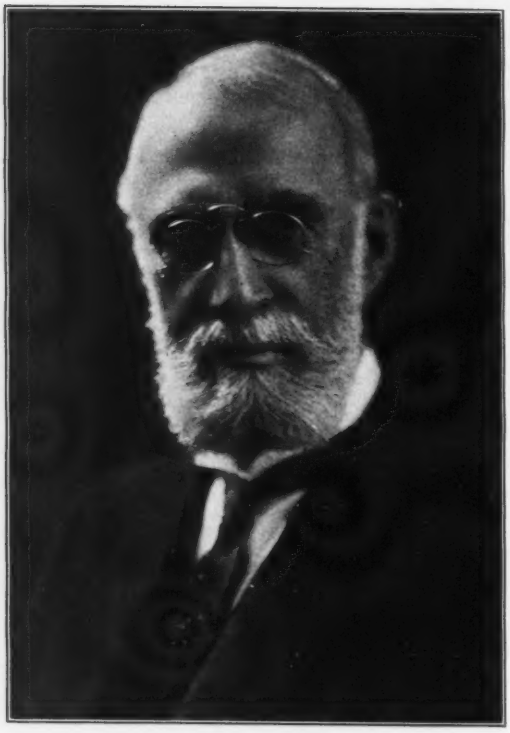
Coming to Los Angeles nearly thirty-five years ago, Doctor Norman Bridge soon won for himself a place of distinction, not alone in the medical profession, but among his fellow-citizens.

Having been for many years professor of medicine in Rush Medical College, much work in medicine was referred to him by graduates of that institution, and his practice soon grew to dimensions that required all his physical strength. For a number of years he returned to Chicago to continue a three months' course of lectures at Rush.

In later years he became interested in the Mexican Petroleum Company, after making several trips to Mexico, and his work in this line gradually extended until during the last few years it had absorbed most of his time.

His writings along medical lines have been extensive. In addition to this he has written a number of volumes on other topics. One of his latest works, "Marching Years," is a modest and fascinating autobiography.

His interest in educational affairs has been such as to lead him to become a most liberal contributor to several institutions of learning—notably the California Institute of Technology and Rush Medical College. His philanthropies have been many and varied; the great majority of which have been known by few of those most intimately acquainted with him. In short, it may be said that



NORMAN BRIDGE, M. D.

his great life work has been along those lines conducive to the uplift of humanity.

But it is to those most closely associated with him that the true dignity of a most noble and elevating character, free from guile and the foibles of ordinary men, can be most fully realized and comprehended. Charitable as to the opinion of others, but firmly true to his own convictions, undeviating in the course of righteousness to God and fellow-man, unflinching in staunchness for the right of all things, he has always been an example worthy of emulation by those associated with him. Legions mourn his loss and realize that a strong, brave, noble character has passed out from our material presence and to his reward.

There are too few such characters in the world, and all who have had the fortune to be closely associated with him have been lifted to a better life than had they not been recipients of his friendship.

GEORGE L. COLE.
ANDREW STEWART LOBINGIER.
HENRY W. HOWARD.

STIMULANTS, DEPRESSANTS, HUMOR

"Shall We Pray?"—Louise Collier Willcox's answer to this question (Harper's) is "good medicine" for many a weary one.

"No arrow is shot but hits somewhere; no song is sung but echoes on in someone's heart; no pebble falls but the stars tremble."

1-19—Of the 87,000 babies born in California in 1924, one of each nineteen of them is scheduled to die of cancer, unless they grow up with a higher order of intelligence than has this generation.

Garlic as a Deodorant?—Try as we may, we cannot follow the "scientists" who are now widely advocating the virtues of garlic as a deodorant: so we notice it here.

"Eventually—"—The victim of the quack eventually reaches the physician; and when he does, it is usually with a condition which has arrived at the chronic stage and which requires prolonged treatment for a cure—even if a cure be possible at all.—S. J. Kopetzky, President New York Medical Society.

Professor—And what did the poet mean by "Wind Along the Waste?"

Practical Pre-Med.—Gas on the stomach, I guess.

"Should evening clothes ever be worn at bridge parties?"

"No, in playing cards it is only necessary to show your hand."

Dear Doctor—I have your letter returning my manuscript, and frankly say to you that I have been mistreated in this matter. I desire that you know that I resent this, and from now on you need not call upon me for any paper or other help, and I shall leave the State Society, retaining my fellowship in the American Medical Association by virtue of my commission in the army.—X., Los Angeles.

Some Consequences of "Health Education"?—One physician reports that a young woman patient consulted him about her "orgasmus retardatus"?! Another patient consulted her physician about her "anomalous sex life," which was caused by her husband's "ejaculatio praecox"?!? Every doctor can tell incidents of this type that are "new" and are always directly traceable to the so-called health education.

Real health education by competent teachers is as commendable as it is old, but we are only beginning to see the consequences of much that goes by the name of "education."

Because your wife is forty is no sign you can exchange her for two twenties.

Sons—This is the title of a short story by B. H. Lehman (Harper's) that has a moral, several lessons and heart throbs that every doctor will enjoy.

A Glanded Car

A negro was up before the judge on a traffic charge.

"Black boy, how fast were you traveling?"

"Wal, jedge, I reckon it was close to seventy-fo' miles an hour."

"Nigger, what kind of a car do you drive?"

"A Ford, sah."

"Boy, don't you know that no Ford will go that fast?"

"Jedge, yo jess doan' understan'; dis Ford am different—it's got Packard glands."

Enclosed herewith is my discussion of Doctor ——'s paper, and with it please accept my apologies for the delay. I shall never let it happen again.—Dr. ——, San Francisco.

Too Much Steam—They were discussing a certain undefeatable and irrepressible politician.

"Well," summed up the smoke-room philosopher, "I'll tell you this about him. He might have typhoid and recover; he might have pneumonia and recover; he might have yellow fever and recover; but—if he ever had lockjaw, by gad, he'd bust!"—The Doctor.

There is as much policy as there is ethics in withholding the names of physicians from public print which records their sayings and doings. The profession as a whole will harvest more of the fruits of publicity by allowing its lay advocate to hold up before the public achievements that speak for themselves and by permitting the public to construct its own argument.—Bulletin San Diego Medical Society.

Osteopathic Literature—"Exercise, air, rest, water, natural eats, and an osteopathic doctor make for life, health, and prospersous days."

"Ashes to ashes, and dust to dust;
If the Medics can't fixe me, the
Osteopaths must."

CALIFORNIA ACADEMY OF MEDICINE

At the first meeting of the year, held at a dinner at the Palace Hotel January 24, the following officers were elected to serve for the calendar year 1925: President, Herbert C. Moffitt; vice-president, William Ophuls; secretary-treasurer, J. Marion Read.

The president has appointed the following executive committee: Harold Brunn, R. Knight Smith, Morton Gibbons, E. W. Twitchell, A. W. Hewlett, Elbridge J. Best.

All communications should be addressed to the newly elected secretary-treasurer, J. Marion Read, at 870 Market street.

Utah State Medical Association

SOL G. KAHN, Salt Lake City.....President
WILLIAM L. RICH, M. D., Salt Lake.....Secretary
J. U. GIESY, 512 Felt Bldg., Salt Lake City,
Associate Editor for Utah

NEVER TOO OLD TO LEARN

We imagine that if our grandfathers, who were perchance physicians, could live today and enjoy the facilities of diagnosis and practice now at our disposal they would burst into tears of delight.

The diagnostic laboratory, the x-ray, more modern and standard methods of examination and history taking, have in a measure revolutionized the work-up of the average case with which we come in contact, though heaven knows some of those old boys were bears at physical examination and seemingly carried eyes in their finger-tips.

Be that as it may, times change, and we ought to change with them. Nowadays the average patient is from Missouri, no matter where he was born, and it is high time that we adopted the Missouri standard among ourselves.

Never too old to learn is a motto every doctor ought to pin in his hat or over his desk, or somewhere, capable of being seen at least daily. It's a sort of preventive from falling into a rut. And ruts are bad things, on a road or in a practice. Today more than ever we should be vigilant. There is just one thing of real interest to the patient and that is—the end-result.

Therefore, we should learn, and keep on learning, and in every community with three or four medical men there is a ready means to this end. Get together—organize a "Review Class." Meet once a week or every two weeks and compare notes, review current literature, write up some interesting subject or case and read it together and discuss it after that. Friction brightens even while it grinds. This is as true of mental processes as of machinery, and if you don't believe it try the experience of going up against some confrere who knows more about a given matter than you do and see if it doesn't—grind! It will, but it will brighten at the same time—it will prove a mental stimulant.

The writer has had the privilege for some years of attending such a class. It has done more than any one thing to help him to keep at least in touch with the profession, and not entirely lose step. There is only one time when a doctor knows it all and that is the first week after he graduates. After that he will, if normal, admit a sense of bewilderment as to just how the men who passed him into the field of medicine happened to make such a whopping mistake. No, we're never too old to learn. So let's get busy learning. And there is no better way for the average man than to organize or gain admission to some already organized review class.

Incidentally, every man in Utah who can make the grade ought to begin now to prepare to attend the session of the Utah Association at Salt Lake in September, and to remain long enough to avail himself of the excellent program being arranged for the immediately following course in post-graduate work.

Utah Hotes (reported by J. U. Giesy, associate editor)—The dates for the Utah Medical Association meeting to be held in Salt Lake City have been definitely set as September 7, 8, and 9, and on September 10, 11, and 12. A course in graduate instruction will be held for all physicians attending the meeting who may desire to avail themselves of the opportunity of enjoying the excellent program now being arranged.

Thus far Doctors Hamaan of Cleveland, Ohio, surgeon; Walter T. Williamson, chairman of the board of trustees of the A. M. A. of Portland, and Brassch of Rochester, Minnesota, have promised to be on hand. Other names are on the list of possible available lecturers now being corresponded with by Doctor Frank Steel, who has this part of the arrangements in hand.

Governor George H. Dern and Health—Instead of following the usual custom of discussing finance and politics in his inaugural message, Governor Dern of Utah secured extensive nationwide publicity because he chose health as his subject. The doctors of Utah are much pleased at having their work thus recognized in a way that will produce wholesome results.

Shriners' Hospital for Crippled Children Opened—The entire south wing of St. Mark's Hospital, Salt Lake City, has been leased by the Shriners and remodeled as the Salt Lake unit of their hospitals for children. The Mystic Shrine has erected six hospitals exclusively for children, and the seventh is in process of construction. In addition, in smaller communities, half a dozen such havens for crippled children have been opened—as the one in Salt Lake. As is the case with the other hospitals supported by this mystic organization, this unit will be devoted to the care of the sick children of Utah. A. L. Heuther, M. D., has been appointed head of the institution. Miss Mabel Torgeson has been appointed day superintendent and Miss Nena Williamson, night superintendent.

Recent Admissions to Practice Medicine in Utah—Results of the recent examinations for student pharmacists, physicians and surgeons were announced recently by J. T. Hammond, state director of registration.

Vernon F. Houston of American Fork, N. Henry Savage of Ogden, C. R. Cornwall of Salt Lake, A. L. Huether of Salt Lake, E. L. Christensen of Salt Lake and Norman Olsen of Salt Lake, who took the examination for physicians and surgeons, will be granted licenses. All of the persons who took the examination passed.

R. G. M. Ehlers was granted a physician's and surgeon's license through reciprocal agreement with the United States Army. Others who will be permitted to practice in Utah because of such arrangements and the states in which they had been licensed, follow: L. E. Growney, Nebraska; C. A. Parker, Kansas; David Maeth, New York, and Nelson Adam Young from Minnesota.

J. T. Hammond, state director of registration, announced that he received $1150.50 in fees last month.

Doctor Murray Rockwell Stewart, City Commissioner, died recently, following an illness extending over a period of two weeks.

Dr. Stewart was a member of the Salt Lake County Medical Society and of the Salt Lake Chamber of Commerce. He was elected to the city commission more than three years ago, and was head of the department of parks and public property.

His parents are both dead, the only surviving relatives being his widow, Mrs. Nellie Walker Stewart of this city, and his brother, Charles T. Stewart.

Box Elder County Medical Society (reported by W. Leroy Smith, secretary)—The Box Elder County Medical Society met January 28 in their annual meeting, and elected the following officers: President, R. A. Pearse, Brigham, Utah; vice-president, T. E. Betensen, Garland, Utah; secretary-treasurer, W. Leroy Smith, Brigham, Utah. Delegate to the State Medical Association meeting, Odeem Luke, Tremonton, Utah. Alternate, R. A. Pearse. Board of censors, E. A. Weymuller and E. H. White.

These were the same officers that presided the past year, they having given such satisfactory service in establishing the new society in our county, that it was the

unanimous opinion that they should continue another year to give the organization a good start.

During the past several months that we have been organized, we have had two luncheons that were well attended, and we have had three meetings at which excellent papers have been prepared and read by the members. One paper by R. A. Pearse on carcinoma of the breast was most interesting. The essayist gave an enthusiastic report of the numerous cases, and illustrated the great amount of increased suffering that is always caused by operating on an inoperable carcinoma that has metastases far from the original tumor, presenting histories of such cases. Another paper by Odeem Luke on the relation of the general public to the present publicity given to venereal diseases and their prophylaxis opened up general discussion of the subject, as it applies locally with very promising effect. And at the last meeting E. A. Weymuller gave a very good paper on some of the minor details in acute and chronic endocarditis.

The members of the society all feel that the meetings have been very beneficial and the attendance has been good, although some of the members have long distances to travel. This difficulty has been overcome by having some of the meetings at the outside points.

Salt Lake County Medical Society (reported by L. J. Paul, acting secretary)—A meeting of the society was held January 26, at the Holy Cross Hospital, Salt Lake City. President John Z. Brown presided, with 49 members and 19 visitors present.

Four clinical cases were presented.

Applications for membership by Leland R. Cowan and Ralph M. Tandowsky were read and referred to the board of censors.

The meeting was then turned over to M. M. Nielson, chairman of the Holy Cross Hospital program committee. A. A. Kerr presented two clinical cases showing successful skin grafting, and discussed a case of acute purulent infection of the gall-bladder. Wilford W. Barber presented and discussed a case of coeliac disease and a case of intermittent subacute intestinal obstruction. The cases were discussed by Root, Stevenson, Tyree, and Brown. John W. Sugden discussed a clinical case and presented post-mortem specimens showing congenital polycystic kidneys. H. P. Kirtley discussed a clinical case of acute prolapse of the uterus in a primipara with forward displacement of "sixth" lumbar vertebra. Specimens were presented, and discussion given by H. P. Kirtley on a case showing absence of a cervix, as well as an absence of opening into the uterus in a patient of 23 years. W. G. Schulte discussed a case showing the value of pyelograms in nephrolithiasis.

The applications for membership of Alfred Blumberg and J. E. Day, having been favorably reported by the board of censors, were accepted by formal vote by the society.

The following committees were appointed:

Medical Liability Insurance Committee— F. A. Goeltz, chairman; Sol G. Kahn, S. D. Calonge.

Medico-Legal Committee—E. F. Root, chairman; H. P. Kirtley, J. C. Landenberger (three years); A. C. Behle, S. H. Allen, W. S. Ellerbeck (two years); M. C. Lindem, C. L. Shields, F. Leaver Stapffer (one year).

Following the meeting, the Sisters of the Holy Cross Hospital served apple cider and wafers.

Salt Lake County Medical Society Meeting of February 9, 1925—A regular meeting of the society was held February 9, at the Commercial Club, Salt Lake City, President John Z. Brown presiding. Members present, 48. Visitors, 3. No clinical cases.

Clinical Program—Frank B. Steele read a very interesting and instructive paper on the treatment of pneumonia, mainly taken from his own practice, corroborating much of the work reported in the literature. Discussion opened by Perry G. Snow and L. W. Snow.

John F. Sharp discussed very effectively the principal complications of pneumonia from the surgical standpoint, stressing especially the treatment of empyema. He contrasted the opened and closed methods of draining the empyema cavities. He strongly advocates the closed method, which he described in detail, presenting a case on which both methods had been used. Discussion by Roy Groesbeck.

A letter from our oldest honorary member, Salathiel Ewing, thanking the society for the birthday remembrance to him which he stated was very, very much appreciated, was read.

Report of the medico-legal committee on the case against Spencer Wright was given by Chairman E. F. Root.

The following new members were elected to the society: Leland R. Cowan and Ralph M. Tandowsky.

Nevada State Medical Association

W. M. EDWARDS, M. D., Mason.....President
CLAUDE E. PIERSALL, M. D., Reno.....
Secretary-Treasurer and Associate Editor for Nevada

Nevada Notes (reported by C. E. Piersall, associate editor)—The staff of the Elko General Hospital met at the hospital staff rooms on January 13. The following officers were elected for the year 1925: Chief of staff, J. R. Eby; vice-chief of staff, C. E. Secor; secretary, John E. Worden.

Immediately following the staff meeting, was the meeting of the Elko County Medical Society, which was called to order by the vice-president, J. R. Eby. The officers for the year 1925 were elected, and are: President, A. C. Olmstead; vice-president, J. R. Eby; secretary-treasurer, John E. Worden.

Washoe County Medical Society (reported by Henry Albert, secretary)—The society met in regular session in the rooms of the Chamber of Commerce February 9, President Muller presiding.

Program—Dr. Henry Albert presented a brief report on "The Immune Reaction to Smallpox Vaccination." Paper was discussed by Pickard and Morrison.

The paper of the evening was by C. P. Caples on "Genito-urinary Tuberculosis." Discussion by Lewis, Morrison, and Albert.

New Business—M. A. Robison presented a draft of a bill to create a state bureau of health in a department of public welfare. On motion, this was referred back to the committee for revision and resubmission at some future meeting.

Doctor Robison also referred to the County Hospital Bill. On motion, the following committee was appointed to assist in securing the passage of said bill through the legislature: Robison, Chairman, Robinson, Pickard, West, Morrison, McLean, and Caples.

Robison also referred to the following items, which are before the legislature for consideration: (1) To change the word "misdemeanor" in the Medical Practice Act to "gross misdemeanor." (2) To change the word "may," referring to revoking a license to practice, to "shall." (3) To prohibit the sale of paregoric and certain other drugs except on a physician's prescription.

There was a general discussion of the control of transmissible diseases. Dr. Samuels offered the following motion: That a committee be appointed to confer with the County Commissioners within twenty-four hours if possible, and demand that the County Isolation Hospital be put in proper condition to receive all kinds of communicable and infectious diseases at once, and that the results of the interview with the County Commissioners be published in both of the city dailies as paid advertisements, and that the bill for same be paid by the Washoe County Medical Society. Passed.

The following committee was appointed: Samuels, chairman, Pickard, Morrison, West, and Tees.

Attendance — Adams, Albert, Brown, Caples, Fuller, Lewis, Morrison, Muller, Pickard, Piersall, Robinson, Robison, Samuels, Stadherr, Thompson, Tees, Walker, and West.

Medical Economics and Public Health

A Sane and Just Appeal—A case sufficiently suspicious to call for antitoxin is suspicious enough to be reported to the health officer for isolation and investigation of contacts for possible carriers. Without such co-operation on the part of every physician, no health department can ever hope to eliminate the disease from the community.—John J. Sippy (California Health Bulletin).

"Economics teach the biologist that the prolongation of life beyond the age of effectiveness is a perversion. Man should be a contributor to the dynamics of his community and not a burden," says N. Philip Norman, M. D. (New Jersey Medical Journal). "On the other hand, there can be no doubt of the biologic desirability of increasing the health span of the individual and ultimately that of the race."

A. M. A. Bulletin—Don't forget, doctor, that the Bulletin of the A. M. A., which goes to every member free, is the most useful medical publication in existence. No doctor can afford not to read in its entirety the January, 1925, issue. It is easy reading, and the matter is of the utmost importance. The authors, for the most part, are those we have elected as our leaders. Harken to what they say.

Nourishing, Well-Balanced Diet for Thought—Wouldn't it be possible for you to be a little more simple when you come into the sick-room and use a vocabulary, even if it is somewhat of a strain, of words that can be found in a comprehensive dictionary, and, in telling the patient what is the matter with him, to try to do it in language used in the home? . . .

When you come to my house and I have a sick child and you sit down and lay out the things that you want us to do, may I be bold enough to suggest that you do what the quack doctor does—leave a little literature. Not only is my understanding feeble, but my memory is short. If I have a child with measles, the sixteen-page booklet of the American Medical Association, costing 5 cents, might be left at the house; it only costs you a nickel, and you are going to take away $150.—Will B. Forbush, Ph. D. (Long Island Medical Journal).

Selling Indirect Service—There is a great tendency today, which is growing very rapidly, for this personal or direct service to be interfered with by commercial organizations, to be taken away from the individual physician by a corporation rendering to the individual an indirect service. By indirect service I mean a service based on what information someone else may get from the person who is in actual contact with the individual. It is perfectly evident, it seems to me, that any such indirect service is to the detriment of the welfare of the individual, *because it can never be as valuable to him as a like service rendered personally.*

These organizations claim that they are not dealing with the sick, but only with the well, and that their service is not the practice of medicine. In the very next breath, in order to show the necessity of their business, they claim that 97 per cent of those whom they examine are not well, that they have some physical defect or some disease which has not been recognized by reason of the fact that the individual has never been examined, and it is their duty to be the intermediary between the individual and the medical profession. I never knew that the medical profession needed a go-between.

They not only have these individuals examined, but they say they amplify the knowledge which they get from the doctor, just like speaking through a megaphone, and that the description sent in by the doctor is mulled over by a number of individuals who have not seen the patient and know nothing about him except what has been told them, and that that has greatly increased the value of the physician's examination. In other words, A REAL EXAMINATION BY THE INDIVIDUAL WHO HAS PERSONAL CONTACT WITH THE ONE EXAMINED IS WORTH SEVERAL TIMES AS MUCH AFTER IT HAS BEEN TRANSMITTED TO SOMEONE WHO HAS NEVER SEEN THE PATIENT.

These institutions not only tell the individual what the matter is with him, but acknowledge that they advise him as to his diet, as to his exercise, and as to the type of medical treatment which he should seek. If diagnosing the case, advising as to the hygienic measures, diet, and any medical treatment which they might think he needs is not practicing medicine, none of us is engaged in the practice of medicine.

Some of these institutions claim that they are not commercial, and that the motive back of them is purely altruistic, but to show that the commercial idea has not been lost sight of, one of them is going to start branches in at least one new state in the near future, and already has started a branch in one state. It is negotiating for a branch in another state; and its method of creating these branches, as I understand, is through the sale of stock, 7 per cent preferred stock. It is to be presumed that the profits from the work will furnish ample means to pay 7 per cent interest on the stock issued. If that isn't a purely commercial proposition, it would be difficult to find one. The idea seems to be to sell a part of this preferred stock to certain doctors in the neighborhood, who would thereby become a part of this organization and help it along.

The service furnished is an indirect one, and any indirect service to an individual is not furnishing him the kind of service to which he is entitled and for which he pays. That can be only a personal and direct service.—M. L. Harris (A. M. A. Bulletin).

"Must the Doctor Answer a Call?"—"The following," concludes Joseph J. Lilly of the New York bar (Medical Economics), "may be stated to be the rules which govern the initiation and termination of the relation of physician and patient:

"1. The physician is under no legal obligation to accept and care for a patient, no matter how grievous the necessity of the patient may be.

"2. If the physician accepts the patient, only for temporary care, as e. g., where he gives immediate treatment to the sufferer from an accident, he should make it clear that further treatment will have to be given by another physician.

"3. The patient may discharge the physician at any time, and from the moment of the discharge the physician is relieved of all liability for future care or treatment.

"4. The physician and the patient may agree to terminate his employment.

"5. The physician may of his sole election terminate his employment, provided timely notice, according to the particular circumstances of the case, be given to the patient to procure another doctor.

"6. When the condition of the patient is such that further medical attention is no longer necessary, the physician may discontinue his services, but should, of course, so advise the patient."

New York Is Attempting to Put This Into Their Industrial Accident Law—It shall be the duty of every employe or applicant for employment in any of the employments enumerated herein:

1. To submit himself to medical examination as herein provided.

2. To furnish true information to his employer or prospective employer regarding his past employment in the employments enumerated herein. The industrial board shall, if necessary, make rules for carrying into effect the provisions of this section.

From One Who Ought to Know—As a result of the indifference of the average pediatrician to child welfare work, his domain has been encroached upon by outsiders not trained in medicine, but keenly alive to the necessity and opportunity for this line of work. The social worker, the nutrition expert, and the public health nurse have entered in and in some instances monopolized the field. . . .

There is a feeling of distruct and perhaps jealousy on the part of some pediatricians toward the child welfare clinics. They learn that one of their little patients has

been taken to a child welfare conference. That the visiting nurse has followed the case in the home and that the mother has become a regular attendant. The family physician feels, and *justly so*, that he has lost a patient.—Henry L. K. Shaw (New York Journal of Medicine).

The Young Doctor and the Medical Society—Dr. Gordon S. Fahrni, in his presidential address before the Manitoba Medical Association, said: "Too little guidance is at hand for the young man just out of college who is suddenly thrown on his own resources. This association should at once endeavor to procure this man's membership, as we need his support and he may be in need of ours. I would, therefore, suggest to this meeting the advisability of giving membership to doctors during their first year's practice at half the regular fee, or even less. The benefit, I feel sure, would be mutual."

The director of the American Red Cross Association says that the principles that should be observed by every reputable health nurse are:

1. Public health nurses do not diagnose, do not prescribe drugs, and do not give treatment without a doctor's orders.
2. Public health nurses do not give nursing care after the first visit without a doctor's orders.
3. Public health nurses do not recommend individual doctors, but advise patients to go to their family physician.
4. Public health nurses do not recommend that patients change doctors or seek hospital care when they have a family physician.

These principles are highly commendable and probably have the endorsement of most nurses. The trouble is that many nurses are employed by and, therefore, take their orders from political bureaus and uplifters that consider the director of the Red Cross Association old-fashioned and out of date.

"Financial success that has its foundation based upon industry, efficiency, and the best kind of professional work is not only admirable, but it is and should be a source of healthy inspiration to all physicians," says Edward Beardsley (Journal of Medical Society of New Jersey). "An income from the medical profession, however, that is acquired as a result of, consciously or unconsciously, lowering one's professional ideals and, more particularly when gained at the potential sacrifice of the health of patients, as a result of careless and insufficient clinical study, is not to be envied."

Springing from a secretive priesthood, medicine for countless ages maintained a similar secretiveness, surrounding its activities with linguistic and other presumably imposing formalities. Some of that influence lurks about our work still—in our Latin prescriptions, in our nomenclature of disease processes, in our reluctance to enlighten the public, and in our star chamber consultations.—David Riesman (A. M. A. Bulletin).

Then and Now—When the British took possession of the Colony of New York, a law was promulgated by the Duke of York which forbade practice upon the people without the advice and consent of accredited physicians. Moreover, the consent of patients was conditioned as well. The object of the law was stated to be "to inhibit and restrain the presumptuous arrogance of such as, through confidence of their own skill or any other sinister respects, dare boldly attempt to exercise any violence upon or toward the body of young or old, one or another, to the prejudice or hazard of the life or limb of man, woman or child.

Here we are well into the twentieth century, and fond of assuming that we have moved very far along the path of social evolution, yet the law which we have quoted betokens a far higher civilization than our own.—Medical Times.

The private physician is more or less familiar with the patient's interests and environment and, therefore, better able to render health service to the individual than is the case when the examinee comes as a stranger to a strange physician. This is important—the success of a health examination depends more upon the rapport between physician and examinee than does a diagnostic examination.—Long Island Medical Journal.

Fitting Health Departments into Medicine—"Preventive medicine and curative medicine should go hand in hand," believes George W. Duvall, M. D. (Medical Economics). "The all-important factor, insofar as a whole-time health department will become either an asset or a liability to the physicians of the community, depends on the training and spirit of its head—the health officer. *The health officer who carries a thermometer, hypodermic syringe, or who has need of narcotic and whisky prescription blanks, is clearly out of his field.* He has need of a stethoscope, but for indigents only. He has need of the bacteriological laboratory in his office, but not from the standpoint of diagnosis, unless called upon by the physicians. He is in the field of free clinics, but they must be conducted so that they will not reflect discredit in the minds of the men of the profession.

"The whole-time health officer is a public servant whose work is educational, with the power to enforce health laws and regulations, and who, while not subservient, assists physicians in maintaining personal and public hygiene, isolation, and quarantine."

Health is the wage-earner's working capital. It represents the surplus on the balance sheet of his life. When by carelessness, neglect, or indifference, he allows it to fail, he topples into physical bankruptcy. His few remaining human assets are in jeopardy, and the heavy liability of despair settles upon him.—Thomas V. Gould (Long Island Medical Journal).

Why Fee Schedules Won't Work—The range of skill, knowledge, and judgment in the medical profession is precisely that of the range of skill, knowledge, and judgment in engineering, in business, in law or in any other human occupation in which a high, low or mediocre degree of human intelligence may be brought to bear upon any given situation.

"The public should be free to choose anything from a Galen to a chiropractor, in accordance with advice given by a grandmother or through choice made after an investigation similar to that customary with trustees of estates when buying bonds," says Medical Review of Reviews.

When Doctors Really Get Busy—"The University of Colorado School of Medicine recently announced the opening of the Colorado Psychopathic Hospital. The bill authorizing this hospital was enacted in 1919, but the legislature failed to pass an appropriation for its construction. In order that the project might not fail at this point, the Colorado State Medical Society secured a sufficient number of signatures to a petition initiating a bill with an appropriation of $350,000. This bill was referred to the voters in November, 1921, and approved by a majority of about 100,000.

"The hospital is located at Denver and is an integral part of the University of Colorado."

PRACTICAL THERAPEUTICS AND THE ART OF MEDICINE

Mr. Felix Lengfeld of the Lengfeld Pharmacies of San Francisco, Dr. Fred R. Fairchild of Woodland, Dr. Henry H. Lissner of Los Angeles, Dr. E. Paul Cook of San Jose, and Dr. William E. Musgrave, editor of CALIFORNIA AND WESTERN MEDICINE, comprise the group of alumni instructors for 1925 in the course on Practical Therapeutics and the Art of Medicine given at the University of California Medical School. This course was given during the spring semester of 1924, and was so successful it was deemed advisable to repeat it in 1925. In general, the instruction will be the same as that given last year, each instructor spending a week at the hospital, taking part in ward rounds, assisting in the instruction of the students, holding seminars, and giving one talk to the student body and house staff on some problem in Medicine.

"She that hath no children doth bring them up well," says an old English proverb.

CORRESPONDENCE

AFRICAN ARCHERY NOTES

This is the first of a series of letters to California and Western Medicine from Saxton Pope, unfolding the "romance" of hunting Big Game in Africa with the bow and arrow. Those who have read Pope's delightful book, "Hunting With the Bow and Arrow," have gained an added respect for these primitive weapons in capable hands, and will look forward with eager anticipation for the exploits of this group of famous hunters.

Dear Dr. Musgrave—By the time this appears in print we shall be sailing over the briny deep on our way to the Big Game Hunt in Tanganyika, and at your request I start a series of periodic reports of our experiences.

This adventure is part of a sabbatical year, which I have taken to celebrate my twenty-five years in the practice of medicine—the theory being that a man should take his long dreamed of holiday when he can enjoy it and not wait till physical incapacity and loss of interest in life settle upon him. Usually a doctor waits so long that he takes his vacation in a wheel-chair, with a clinical chart carried at a convenient distance by a trained nurse.

So it might be said that I felt so well, I just had to go to the mountains, for I started, as all good Californians should, by seeing America first. Six months of this sentence was spent exploring in the mountains and hunting with my bow and my dog. Part of the time I was with Captain Cassius H. Styles, U. S. A., late of the Aviators Corps; part with Tom Murphy, the bear hunter, or Monte, the Klamath Indian, and part with Stewart Edward White, the author.

Mr. White became converted to archery after reading my famous book, "Hunting With the Bow and Arrow," and he has grown rapidly into an accurate shot. Already we have hunted geese, deer and bear together, and it is through his insistence that we journey to Africa to add glory and honor to the bow.

So, at the special invitation of Leslie Simson, who is now in British East Africa, Arthur Young, Mr. White and I go to join him on a safari into Tanganyika, an unexplored portion of what was German East Africa.

We leave New York March 6, sailing for Cherbourg, France. From Marseilles we embark upon the Mediterranean and go through the Suez Canal, Red Sea, into the Indian Ocean, landing at Mombassa. From here we take the train to Nairobi, Kenya Colony, at which point we motor in Ford cars over the open plains for three days' journey south near Lake Tanganyika. From this point we go on foot with native packers into the jungle.

This requires six weeks' travel, and we expect to be gone six months, hunting. Our object is not of scientific interest—it is purely a romantic adventure. It is true that Doctor Terry has requested me to investigate the distribution of the gall-ducts in the various game animals coming under our observation and thus to supplement an interesting study in comparative anatomy, started by Dr. Mentzner of Rochester. I have agreed to work out the diagram of the gall-bladder and ducts on part of the ninety-six species that inhabit this part of Africa.

Our prime object is to hunt with the bow and arrow the many small game, water bucks, antelope, and other herbivora of the Tropics. We are not attempting to make any foolhardy assaults on lions, elephants, rhinos, and buffalo. The probabilities are that an arrow will kill all of these fearsome beasts, and, under favorable conditions, we may try the experiment. But here (it is only part of sanity) we shall be backed up with "life insurance," the big cordite guns, and it must be remembered that we go in company of two of the greatest African hunters of the age, Simson and White. The latter is considered by Roosevelt the best shot that ever entered the country.

Natives, of course, do kill lion with spears, and the incidence of homocide is fairly small. Still, we are not looking for that form of excitement.

In our equipment, besides a complete medical and first-aid kit, we take four or five bows apiece with 300 arrows. Materials for making 3000 arrows we carry, to be assembled later, with assistance from the natives. Tropical clothing and camp luggage complete the outfit.

Our hunting will take place on the elevated plateau of Tanganyika, where the nights are very cold and the days about as hot as the San Joaquin Valley in midsummer.

So, if it will amuse you, from time to time I shall send a letter spinning across the globe, carried first by a naked, sweating African, running with a spear in one hand and the mail in the other; then by dusty, creaking ox-cart and funny jerk-water Uganda railroad; then ships surging through the mighty deep, transcontinental rail and air-mail to you in San Francisco, telling you how we fare in the far-off land, what strange sights we see, and what adventure we meet.

Yours, as ever,
SAXTON POPE.

ECONOMIC CASE REPORTS

Case 1—One of the organizations located in an Eastern city and practicing medicine illegally in California is energetically "sampling" and "circularizing" our people with propaganda about curing rupture by local application.

As a work of art, read this from their claims:

"The free sample treatment is, of course, not sufficient in quantity to be of any permanent benefit. It is sent so you may know what —— is like and how easy it is to use. But if it is possible for this small quantity to organize a normal process of repair, you will understand just how so many thousands have been able to report lasting freedom from rupture after using the full self-treatment supply in connection with my perfect holding Comfort Support."

The submission of this class of stuff to doctors by their patients is a wholesome sign of increasing intelligence of the public.

Case 2—Another Chicago concern is telling our people how they can have their lives extended ten years—for a fee. They claim that:

"Our work is not a fad of an hour. It is not a course in physical culture; or dietary, or drugless healing. We make a thorough examination of the urine, tell you what we find and explain the significance, and keep a copy of all reports *so that the subscriber gets with each report a statement of the present condition* and a comparison with the previous reports."

Many Californians are sending their good money and their "canned urine" to concerns of this class, and are trusting these "health by mail" "doctors" to guide them in preserving their most precious asset—HEALTH.

Case 3—And They "Fall for It"—The following is reading matter in a widely read women's magazine which conducts a health club headed by a doctor of medicine:

"This doctor (not the editor of the medical department, but another one) has never had a failure. He discovered his process for removing hair in treating a skin disease on a man who wore a beard. He invented a machine which perfected the process, and for twelve years his twenty-four machines have been in constant use. There is absolutely no return of the growth, and women in a highly nervous condition have found the treatment beneficial to their general health. *We should be glad to send you privately any information you wish in regard to this matter.* We feel how great is this man's gift to women, freedom from sensitiveness and self-consciousness. As we have said before, we think that self-consciousness, and not money, is the root of all evil."

If you can beat that—outside of radio health land—we would like to hear from you.

In this world if you do not say a thing in an irritating way you may just as well not say it at all, because people will not trouble themselves about anything that does not trouble them.—Bernard Shaw.

Medicine Before the Bench

Findings and Comments of the Courts on Acts and Omissions of Doctors

(EDITOR'S NOTE—*The law reports contain many interesting decisions, involving the reputations and fortunes of doctors. In this column in each issue a brief summary of one or more decisions and comments of the several courts of last resort upon the cases will appear. The matter will be selected by our general counsel, Hartley F. Peart, who, with Hubert T. Morrow, attorney for Southern California, will contribute from time to time.*)

In a case where a physician was charged with having negligently failed to remove a sponge from his patient after the performance of an operation for appendicitis, the interesting question was presented as to whether or not the statute of limitations commenced to run from the time the sponge was negligently sewed up in the plaintiff's abdomen, or from the time that the physician ceased to treat the plaintiff and the relationship of physician and patient had terminated. It appeared that the operation was performed on November 1. The physician neglected to remove a sponge which had been used in the operation, but thereafter continued to treat the plaintiff until March of the following year. The statute required actions of this character to be brought within one year. The defendant's counsel contended that when the sponge was negligently left in the patient the statute commenced to run, and the subsequent failure to remove it did not arrest the statute or give rise to a new or independent cause of action. The Supreme Court of the state where the cause was pending refused to follow this reasoning, and followed a previous decision involving the liability of a veterinary surgeon, holding that it was the defendant's duty to give to the case such continued further attention, after the operation, as the necessity of the case required. The court says:

"This, we believe, is a sound and salutary rule to govern the relation existing between the patient and the surgeon, who practices his profession and undertakes the serious operation described in this record. If such care is due to a dumb animal, it is surely due to a human being. . . . If we call malpractice a tort in this case, it is a tort growing out of a breach of contract which the law implies from the surgeon's employment and undertaking to perform the operation. We have seen that it was a continuous obligation and recognized by the law, and it was alive and binding so long as the relation of physician and patient subsisted. If so, it was the ever-present duty of the surgeon to remove the sponge from the body of the patient. It was a constant and daily obligation to use ordinary skill and care, and if by omission or negligence he had left a foreign substance within the walls of the incision at the operation, it behooved him to afford timely relief. Neglect of this duty imposed by a continuous obligation was a continuous and daily breach of the same, and, as the facts show, caused continuous, increasing, daily and uninterrupted injury. Should she (the patient) have brought her action immediately following the sewing up the walls enclosing the sponge? If she had done so, there were as yet no injurious consequences and but nominal, if any damages, could have been recovered. The injury consisted not so much in leaving the sponge within the cavity, as negligently continuing it there, or allowing it to remain there from day to day for about a year and until he dismissed her from his attentions. The grievance of the plaintiff was not alone confined to the negligence in the operation, but also in the painful consequences which followed, and which, as he repeatedly assured her, would soon disappear, if she would but patiently wait. . . . The facts in the case at bar show a continuous obligation upon the plaintiff in error, so long as the relation or employment continued, and each day's failure to remove the sponge was a fresh breach of the contract implied by the law. The removal of the sponge was a part of the operation, and in this respect the surgeon left the operation uncompleted."

It was held that the action was not outlawed, if brought within one year after the defendant ceased to treat the plaintiff.

Decoys not Permitted to Ensnare Innocent into Committing a Crime—The legal privileges of decoys for ensnarement was an important point in the recent trial of a doctor for violation of the Harrison Anti-Narcotic law. The legal status of "ensnarement" was presented by the court in the following language:

"The court instructs the jury that, while it is permissible for government agents and officials, through detectives and decoys, to entrap criminals, or to present opportunity to those having intent to or who are willing to commit crime, it is not proper for government officials, agents or decoys to incite to or create crime, for the purpose of prosecuting it or punishing it, and if the jury believe from the evidence that the government's agent and witness, John Walter McDonald, through false statements made to the defendant to the effect that he was suffering from a disorder of the stomach and required morphin for the purpose of relieving the pain incident thereto, or that he was an addict or had been an addict, and found it necessary to occasionally take small doses in an attempt to cure himself from the drug habit, and through such statements, which were false, procured from the defendant the morphin for the dispensing of which the defendant stands indicted, and the defendant, believing the statements made by McDonald were true, was induced thus to violate the law, and that said defendant was not theretofore willing thus to violate the law, and would not otherwise have violated the law, then the jury should find the defendant not guilty."—Journal A. M. A.

California Association of Physiotherapists (reported by Florence C. Burrell)—Uses of the head-sling in physiotherapy and treatment of flat-foot were the subjects at the monthly meeting of the San Francisco branch of the Association of Physiotherapists at the Ethel Moore Health Center, Oakland.

H. W. Hitchcock, M. D., gave five types of disabilities that could be relieved by head traction given with hot packs over the spastic muscles during suspension. First, the relaxed child with loose ligaments who often gets a kink in the neck, with accompanying muscle spasm. Second, the carnivorous, often neurasthenic, type with poor posture and pain in the back. Third, those with sudden low-back strain, with negative x-ray findings, who may be relieved by strapping during suspension. Fourth, those with hypertrophic changes in the spine who have headache and pain. Fifth, used in applying plastic collars, etc. Relief of muscle spasm is the object of the treatment.

W. F. Holcomb, M. D., spoke on the various stages of static foot deformity and their treatment. He brought out the fact that most of the common disabilities of the foot are due to improper uses of the foot, with especial regard to the attitude of the feet during locomotion. The progressive stages of the deformity were (1) abduction of the forefoot with its consequent ligamentous and muscular strain, (2) lowering of the longitudinal arch with its consequent loss of elasticity, and (3) rigidity of the foot in the deformed attitude. Correction of the first stage is entirely possible by the common supportive means along with instruction, exercises, and proper shoes. Plates were discussed with regard to treatment of the second stage. It was brought out that the Whitman plate was rather a corrective brace than a support, while the Boston foot plate was a support without any idea as to the correction of the existing deformity. Shortening of the tendo-achilles was to be looked for in every case of flat-foot, for without treatment of this condition relief was not always afforded. For rigid flat-foot and congenital flat-foot (pes planus) open operation or manipulation under anesthesia was deemed necessary.

Patriotism cries, "God give us men," but the parties say, "Give us votes and offices," and Congress proceeds to create a commission. Thus responsibilities are shirked and places are multiplied.—Henry Waterson (recent biography).